FIFTY CENTS

Research In Wood Finishing

Basic Fabric Facts

Furniture Engineering

APRIL 1960

How Dearborn Uses Hardboards

New Products Section

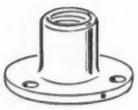
What's New In Vinyls

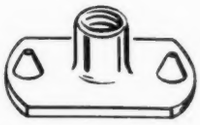
Furniture Design & Manufacturing

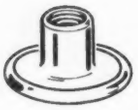
Flair for Quality—How case goods manufacturer entered upholstered field

THE FIRST TEENUT was developed by Carr Fastener nearly thirty years ago. Since then, literally hundreds of special-purpose variations have been designed to meet the particular requirements of the woodworking and metalworking industries.

Mounting the standard, pronged Teenut is extremely simple. Drill a hole the same size as the Teenut barrel and hammer in the Teenut so that its prongs penetrate the wood and provide positive anchorage. Counter-boring permits completely flush mounting. Other types of Teenuts are available for anchorage with nails, screws or . . . in metal . . . by spot-welding.







DOT®

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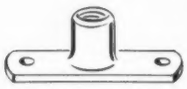
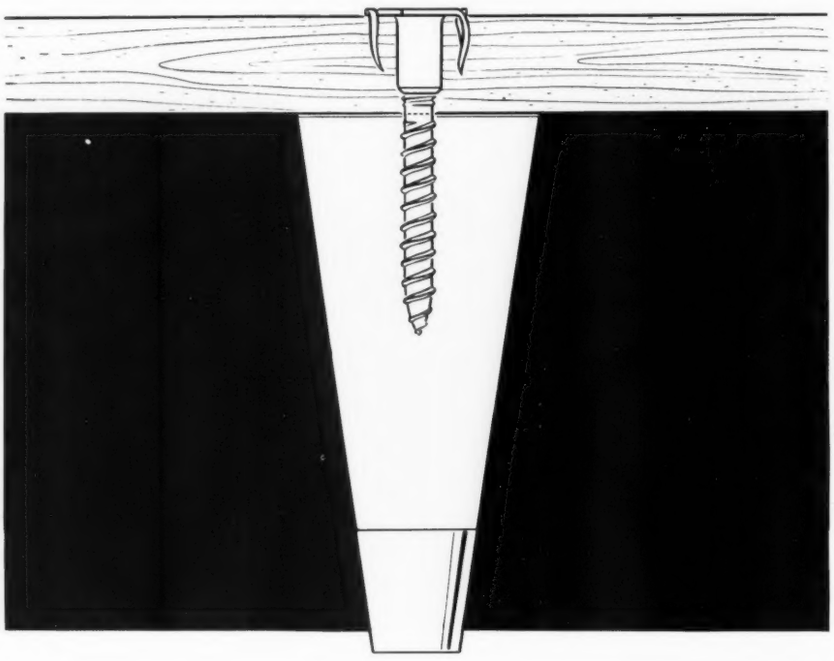
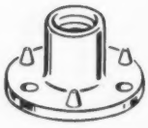
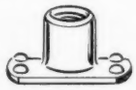
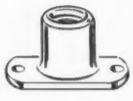
★*The name TEENUTS is a registered trade mark of United-Carr Fastener Corp.*

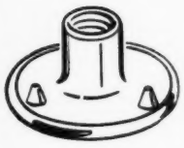












A wide range of thread sizes, barrel lengths and flange configurations permits tremendous versatility of application. Special types can be designed and produced in volume. For *completely blind* applications, Dot's unique Petal Nut is available in the 1/4-20 size and is being tooled for other sizes.

For further information, write for Engineering Data Catalog, Section E.

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FOR DATA CIRCLE FDM NO. 1046

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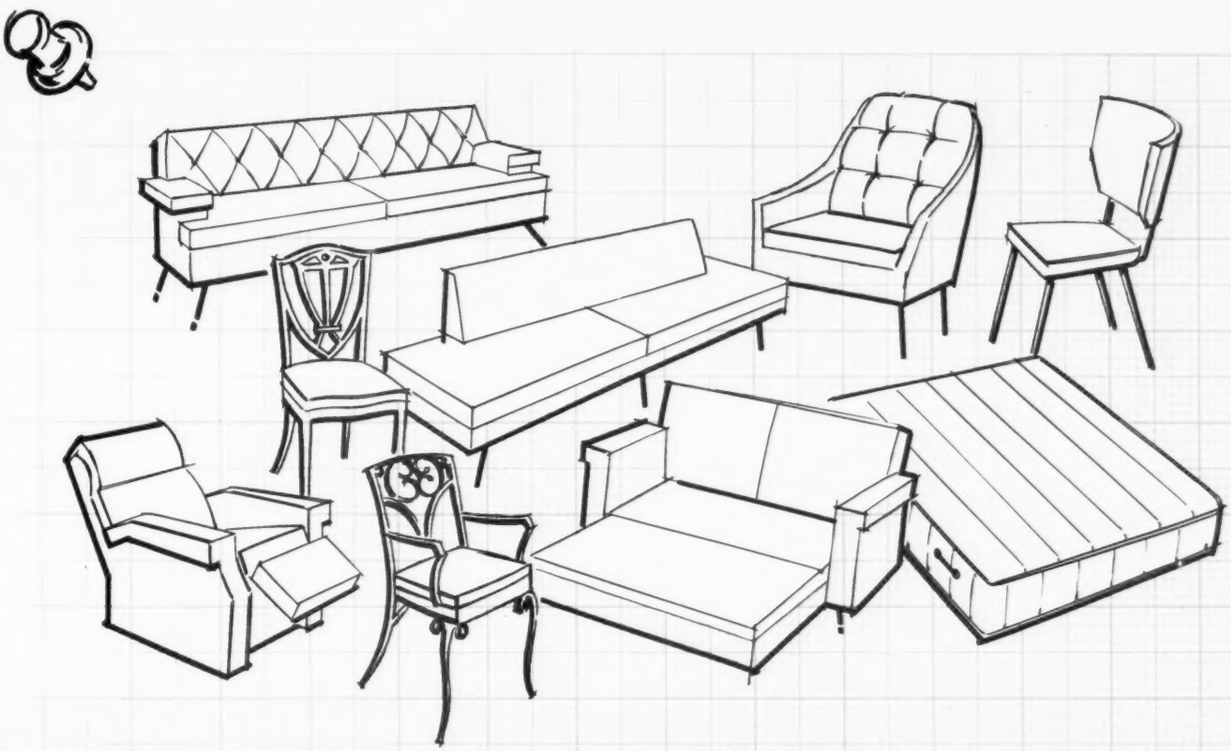

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urkart Foam is a superior quality insulating nd cushioning foam designed particularly for ıe furniture, upholstery and bedding indus- ies. But even within each industry, foam re- uirements vary. What may be an ideal foam ensity and resiliency for one product may not e for yours. You, as a manufacturer ordering ıam, can now be assured of receiving foam you know is exactly right for **your** needs. Every pound of Burkart Foam you order is produced, from start to finish, to meet your special requirements. It is made especially for you and shipped to you direct from the Burkart factory. And with no "middle-man" to deal with, you save because extra charges for additional handling are now eliminated.

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Burkart Foam can now be fabricated to your specifications

hatever the thickness, shape or contour of ɔur design requirements, Burkart Foam can ɔw be ordered direct from Burkart fabricated your specifications. Burkart specialists are adily available to work with you to determine ıe exact type of foam best suited for your oduct. Every order is made completely under ıe roof, from the formulation of the chemicals the fabrication of your most intricate designs.

And every pound of Burkart Foam is made of a formulation specifically compounded for the furniture and bedding industries. You receive the foam already cut, already trimmed—ready for immediate use. Now Burkart Foam saves you more time, more money by further lowering your production costs and reducing handling time. And because every piece you receive is of uniform quality, costly rejects are eliminated.

now you
can order and get
BURKART FOAM
direct from Burkart
fabricated to
your specifications

BURKART FOAM is backed by an 80-year reputation for quality

For more than 80 years, the furniture, upholstery and bedding industries have relied on Burkart quality. During that time, they knew they could depend on Burkart for the newest developments—the latest innovations in insulating and cushioning materials.

And Burkart specialists continue to work directly with manufacturers to help develop cushioning and insulating materials which will best suit their individual needs. These manufacturers know from experience that each new product —each new advance in the field is offered by Burkart only after it has been tested and proved worthy of the Burkart name. A good reason for their confidence is Burkart Foam.

When urethane foam was first introduced, Burkart realized this revolutionary new product needed much more improvement before it could be satisfactorily offered to the industry. Rather than produce an inferior, untested, and unrefined product which could only disappoint its users, Burkart waited until perfect performance could be assured. Only after four years of testing—and more than 4,000 rigidly controlled laboratory experiments which tested specific applications in the furniture, upholstery and bedding industries — was Burkart Foam considered ready. Today, Burkart Foam continues to be unexcelled for quality.

If this is the type of quality you want, the kind of first-hand experience you want to be assured of, and the individualized service you have every right to expect, order Burkart Foam direct from Burkart for the best job every time.

FREE IMPRINTED STREAMERS AVAILABLE:
These attention-getting satin streamers will do a real selling job for your finished product. Provided free of charge on request.

CHECK THESE IMPORTANT FEATURES
They're the "Better Points" that make Burkart Foam Better for You!

Improved Cushioning Qualities • Minimum Compression Set • Uniform Density Throughout • Completely Hygenic and Non-Allergic • Resists Mildew, Moths, Molds and Other Pests • Not Affected by Cleaning Solvents and Detergents • Never Becomes Uncomfortably Warm • Non-Skid Surface Prevents Fabric Shift • Performs Well At Any Temperature • Can Be Tacked, Sewed, or Hog-ringed • Will Not Disintegrate

Now, Burkart Foam can be ordered direct from Burkart—fabricated to your exact specifications for:

REVERSIBLE CUSHIONS:
The bounce and elasticity of Burkart Foam provides perfect support and resiliency with none of the "fight-back" generally found in other type products.

ARMS AND BACKS:
Because of its tensile strength and stretchability, Burkart Foam can be easily shaped, skived, hog-ringed, stapled, tacked or glued to any base. And it can be sewn to any fabric with no danger of overheated needles.

MATTRESS CORES:
Burkart Foam offers a combination of surface softness with feather lightness—providing the contoured support essential to perfect sleeping comfort. And it's completely reversible—so conveniently light a housewife can pick it up and turn it with complete ease.

MATTRESS TOPPERS:
A cushioning layer of Burkart Foam can easily be put on mattresses of any construction to provide a softness never before available.

UNLIMITED USES:
Workable, easy to handle Burkart Foam provides an unlimited variety of uses and applications for such things as dinette seats, bolsters, dining room chairs, solid base construction which were never before possible with other foams.

ANY INSULATING OR CUSHIONING NEED:
The unsurpassed quality and unmatched versatility of Burkart Foam make it an ideal cushioning material for any purpose.

Write us today for additional information. Quotations and specific details will be forwarded on request. Or, if you prefer, we will be happy to have one of our skilled specialists call on you.

BURKART URETHANE FOAM

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EDITORIAL

Management needs technical information

Our furniture manufacturing industry depends greatly upon its suppliers for technical aid and advice. It is fortunate that these vendors, for the most part, are well equipped and have an honest desire to render valuable service. These firms and their representatives certainly belong on the furniture manufacturing team.

However, to utilize these services more fully, we need more informed buyers and specifiers with pervading technical knowledge; specialists if you please. As our industry grows more complex in the use of new materials and processes, this need will be more acute.

An informed buyer is capable of choosing the grade, price and quality of materials and supplies that are right for his company's product. He is aware of current properties and standards of materials and buys accordingly.

He also knows that forcing a supplier to yield to unreasonable price demands will likely result in lower quality delivered goods, or the loss of a reliable supplier.

Today the furniture manufacturing industry needs more upholstery fabric specialists. Furniture covering materials constitute one of our most important purchases, both in dollar cost and customer satisfaction. Knowledge of style and color trends are important, but not enough in this competitive age.

Technical data regarding furniture textiles, including fibers, yarns, dyes, weaves, backing and chemical treatments, are necessary to predict a fabric's performance. This is especially important because of the importance consumers give to durability when making a furniture purchase.

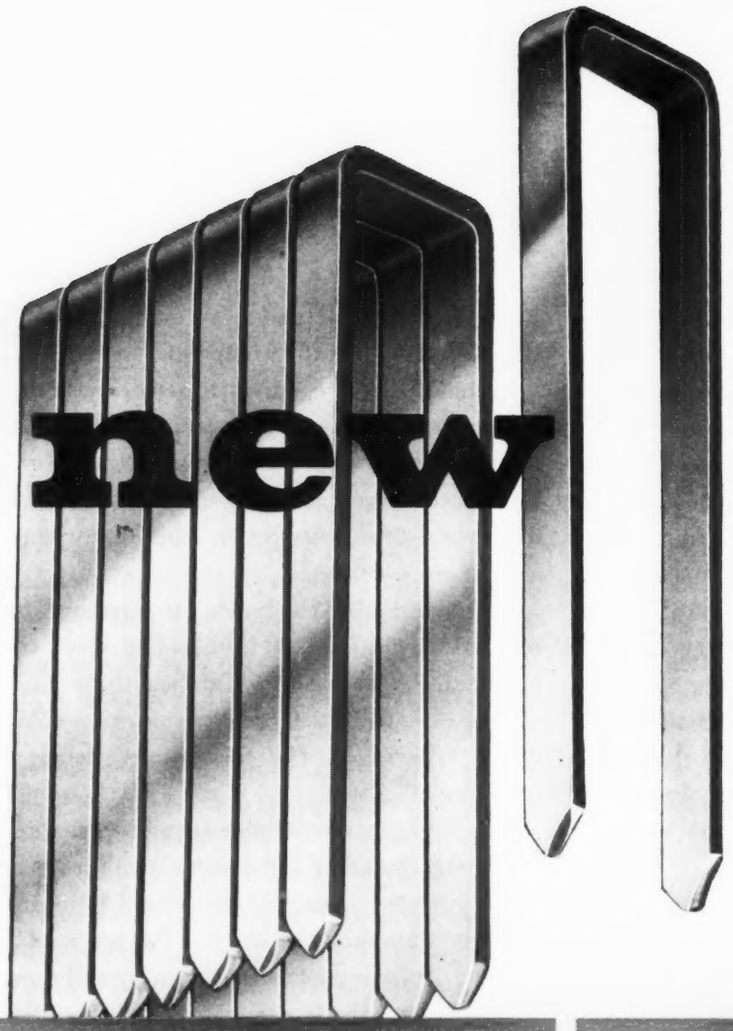
An important contribution to training furniture textile specialists is the forthcoming short course to be conducted by North Carolina State College in cooperation with the Southern Furniture Manufacturers' Association. The concentrated course will be held May 17-20.

It is the purpose of this magazine to bring you noteworthy technical information on all pertinent subjects, presented in easy-to-understand form, including furniture fabrics. Another in the series of articles devoted to basic facts about upholstery fabrics, constructions, and textile raw materials begins on page 14 of this issue. This regular monthly feature is written by E. O. Fricker, recognized authority.

Perhaps there are other subjects which we should cover in depth. We welcome your suggestions.

R. A. Helmers, Editor

THE **new**



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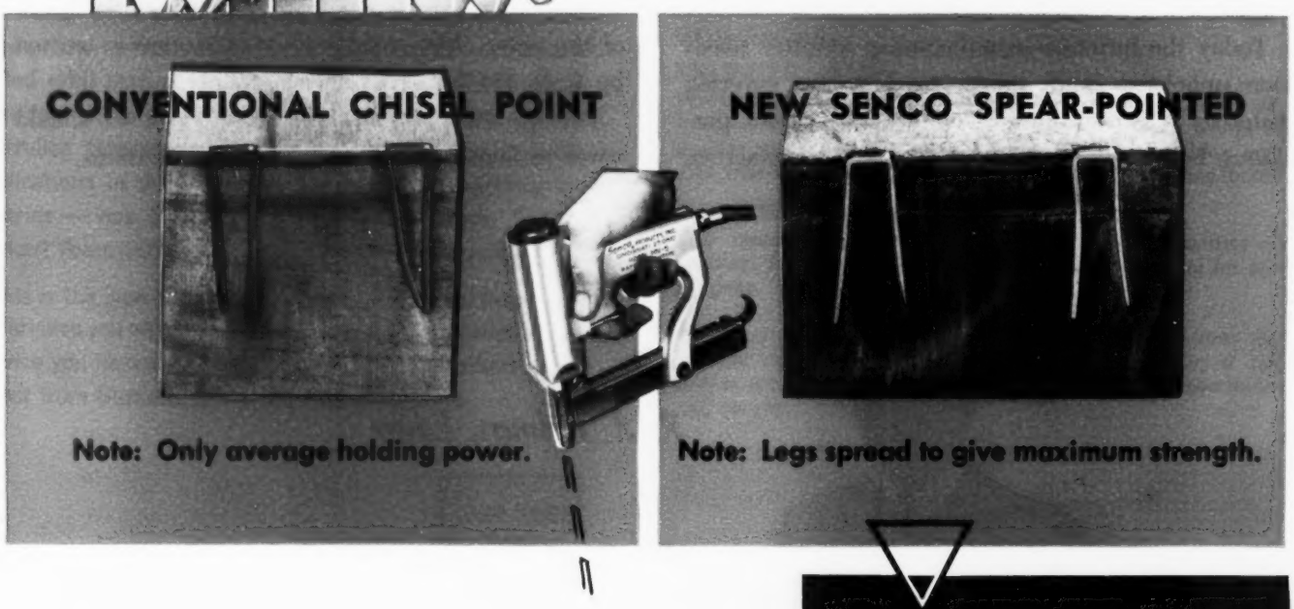
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Note: Legs spread to give maximum strength.

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FURNITURE Design & Manufacturing

VOLUME 32 NUMBER 4 APRIL 1960

Top Management Publication Serving the Furniture Manufacturing, Upholstering and Bedding Industries.

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OUR COLOR COVER—One of the neatly-tailored sofas in the Flair, Inc. line. For what's inside the furniture . . . and the new plant . . . see article page 20.

INSET—Acidity of wood is being checked on pH meter at Duke University's new finishing lab. Story page 65.

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FDM
FURNITURE DIGEST FOR MANAGEMENT

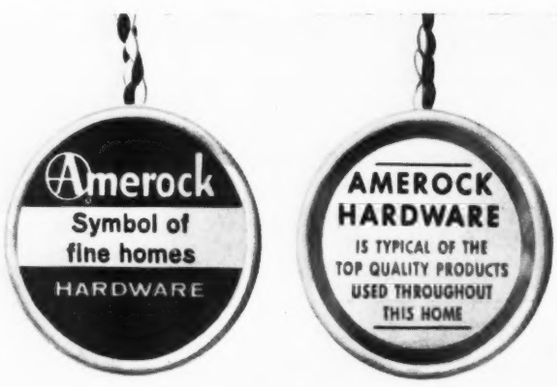
For more complete information on any of the Bulletins below, just circle the Bulletin Numbers on the READER SERVICE CARD which you will find elsewhere in this issue. A copy of the source material will be sent to you promptly.

Management Notes

HARDWOOD PLYWOOD SHIPMENTS jumped four per cent in the fourth quarter of 1959, over the same period in 1958, but represented a three per cent drop from the third quarter of 1959. Figures compiled by the Bureau of the Census, Department of Commerce, indicated a total shipment of 237.6 million square feet surface measure, exclusive of container and packaging plywood. Market shipments of veneer core plywood showed a similar pattern, with shipments of 222.8 million square feet surface measure in the fourth quarter of 1959, 213.9 million square feet in the fourth quarter of 1958, and 231.0 million square feet in the third quarter of 1959. Lumber core plywood shipments were 14.8 million square feet in both the third and forth quarters of 1959, and 14.4 million square feet in the fourth quarter of 1958. *Bulletin No. A-127.*

FURNITURE DESIGN AWARDS CONTEST sponsored by the cotton industry has been expanded this year to allow for distribution of two additional cash prizes. The 1960 contest will include four awards of $1,000 each and four of $500. Six prizes were awarded in previous years. In addition to the cash prizes, the sponsors, National Cotton Council and National Cotton Batting Institute, will aid designers in bringing their sketches to the attention of manufacturers. The purpose of the competition is to emphasize the versatility of cotton and spring construction in furniture that meets the special needs of contemporary living. Designer efforts to use proven structural methods and materials decoratively is the outstanding theme of the 1960 contest. *Bulletin No. A-128.*

AMEROCK CORPORATION is distributing colorful foil emblems with which furniture manufacturers can promote the use of Amerock hardware in their products. The emblems are being promoted in the firm's national advertising in leading home builder and consumer publications. For samples and full details, write for *Bulletin A-129.*



FILM ON POLYURETHANE FOAM has been prepared by Allied Chemical's National Aniline Division. The 13½ minute film, "Polyurethane Foam—A New Dimension in Comfort," in sound and color, highlights foam characteristics and the extensive chemical research, tests and experiments and controls necessary to produce quality polyurethane. For information circle *Bulletin A-130.*

B. F. GOODRICH has announced a new system of labeling mattresses aimed at positive and immediate identification of compression values. The system has been put into effect on its Texfoam line. Individual lables carry exact information on the compression values of the mattress, enabling a dealer to advertise a mattress as "firm" or "soft" with the assurance that he has the data handy to back up his statement. Lables will carry one of the following messages: *Special,* 17-20 lbs. compression; *Medium,* 21-24 lbs. compression; *Firm,* 25-30 lbs. compression; *Extra-firm,* 31-39 lbs. compression; or *Super-firm,* 40-44 lbs. compression. *Bulletin A-131.*

INVENTORY LOSSES can be the "graveyard of American business," according to a small business handbook recently published by Roy A. Foulke, vice president of Dun & Bradstreet, Inc. Entitled, *"Inventories and Business Health,"* the publication indicates two primary causes of inventory losses, price drops and obsolescence and discusses ratios that can serve as guides to a fuller comprehension of inventories and their control. *Bulletin A-132.*

FIRST TRUCKING CONFERENCE sponsored by the *National Association of Furniture Manufacturers* is rapidly taking shape, with the date now set at May 25-27, at Ann Arbor, Michigan. Experts on truck leasing, containerized distribution, and accounting methods are scheduled to appear. The meeting will be held in cooperation with the department of transportation, University of Michigan and the National Furniture Traffic Conference.

The NAFM decided to conduct meetings on this subject after a survey by its research department revealed a lack of information on ways to operate trucks more efficiently and a need manufacturers to exchange information based on practical experience and cost knowledge. Attendance limited to 50 manufacturers.—*Bulletin A-133.*

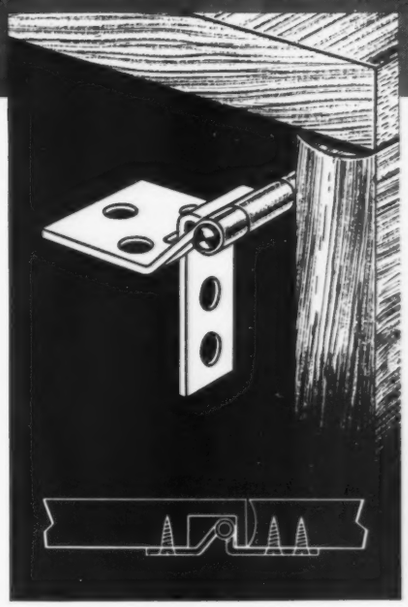
FURNITURE TEXTILE COURSE will be held at The School of Textiles, *North Carolina State College,* Raleigh, N. C. May 17 through May 20. Conducted in cooperation with the *Southern Furniture Manufacturers' Association* and the College Extension Division, the instruction will cover fibers and yarns, fabric construction and characteristics, dyeing and finishing, and testing of upholstery fabrics. Registration fee is $100 per person. For further information, write for *Bulletin A-134.*

NATIONAL OFFICE FURNITURE ASSOCIATION, at its 14th Annual Convention-Exhibit at Atlantic City, N. J. elected *R. P. Lewis, R. P. Lewis Co.,* Flint, Michigan president, succeeding *Vernon Vallet, Southern California Stationers,* Los Angeles, Calif.

Continued on page 12

That truly modern, clean-lined look

. . . starts with the STANLEY No. 811 Drop Leaf Table Hinge!



Here for the first time is a drop leaf table hinge that swings the leaf *under* the table top . . . giving a smart, clean, squared-off appearance that is the essence of all good modern design.

And in addition to enhancing the appearance of your drop leaf table designs, this new hinge revolutionizes construction by eliminating the cost of cutting the bull nose required for conventional hinges. Assembly is speeded, and costly hand-finishing is no longer necessary.

Designed for use on tables of standard ¾-inch thickness, the Stanley Drop Leaf Table Hinge automatically stops the leaf at 90 degrees and is ideal for use with the standard Stanley No. 1956 Drop Leaf Table Support. Choose the No. 811, Wrought Steel . . . or No. TS811, Tempered Steel hinges where extra strength is required.

For Complete Information . . . write now to Industrial Hardware Sales, Stanley Hardware, Division of The Stanley Works, 83 Lake Street, Dept. D, New Britain, Connecticut.

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Continued from page 10

Sales & Marketing Div. Meet

The Sales and Marketing Division of the Southern Furniture Manufacturers' Association held its Spring meeting at the Robert E. Lee Hotel, Winston-Salem, N. C. February 25-26.

Friday addresses were by Dr. Ralph Robey, Economic Advisor, National Association of Manufacturers; Dr. C. Stewart Sheppard, Dean, Graduate School of Business and Public Administration, Cornell University; and Dr. George D. Heaton, Industrial Consultant.

Group discussions, headed by President John T. Roughton, included small retailers and department stores, furniture wholesalers, warehousing problems, and other sales management problems.

The Fall meeting will be held at Mayview Manor, Blowing Rock, N. C., September 8-9. ■

Production & Cost Div. Meet

The 50th semi-annual meeting of the Production and Cost Division of the Southern Furniture Manufacturers' Association was held March 4-5 at the Robert E. Lee Hotel, Winston-Salem, North Carolina.

The program opened with an analysis of the new labor law, presented by Thornton H. Brooks, attorney, McLendon, Brim, Holderness & Brooks. Luncheon address by Dr. I. G. Greer, Business Foundation, University of North Carolina, was "Management's Responsibility in Providing Leadership."

Friday afternoon sessions were devoted to cost reduction techniques.

R. F. Wilder, Kroehler Manufacturing Co.; John Parsons, Stanley Furniture Co.; and T. M. Thorpe, Drexel Furniture Co. presented papers describing methods of their respective companies.

Saturday morning sessions were in the form of group discussions under direction of C. P. Reinhardt, president.

A new slate of officers was elected prior to adjournment. Charles H. Prevost, Thomasville Chair Co., was elected president. New vice president is W. A. Thorn, The Berkline Corp.; second vice president is R. Bowman George, Mount Airy Chair Co. The following directors were elected: W. Phil Bost, Conover Chair Co.; John Parsons, Stanley Furniture Co.; Mack Auman, Sanford Furniture Co.; Lee Boddie, Broyhill Furniture Factories; and Charles Carey, Drexel Furniture Co.

Fall meeting of the Division will be held at Mayview Manor, Blowing Rock, N. C. August 26 and 27. ■

Store Fixture Assn. Meet

NEW PRESIDENT of the National Association of Store Fixture Manufacturers, A. S. Rovak, (center), and the new treasurer, Otto J. Coerver (right), are congratulated by Robert L. Strauss, executive secretary.

Discussions of wide belt sanding and cost reduction highlighted the Fifth Annual Convention of the National Association of Store Fixture Manufacturers, held March 17-18 at the Conrad Hilton Hotel, Chicago.

Elected 1960-61 president was A. S. Rovak, of the St. Louis Fixture Manufacturing Co.; vice president, Osborne Pfingst, of the McCloskey-Grant Corp., Philadelphia; and Otto J. Coerver, of Otto Coerver Co., Dallas, takes over as treasurer.

Clifford N. Sellie, president of the Standards Engineering Co., Chicago, addressed the first noon meeting on "Application of Modern Techniques in Cost Reduction."

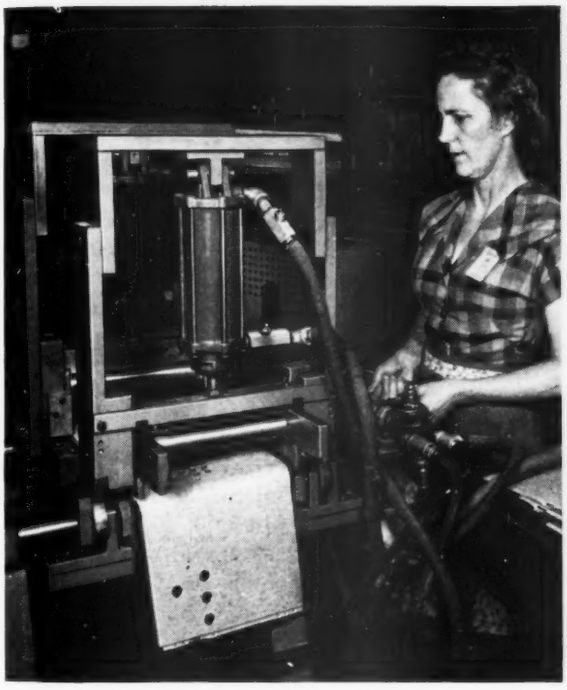
Convention talks were also given by Dr. Joseph W. Thompson, director of the School of Hotel, Restaurant, and Institutional Management at Michigan State University, Frederick W. Turner, Jr., from the law firm of Turner, Hunt and DeBolt, Chicago, and Gordon L. Schuster, president of Timesavers, Inc., Robbinsdale, Minn.

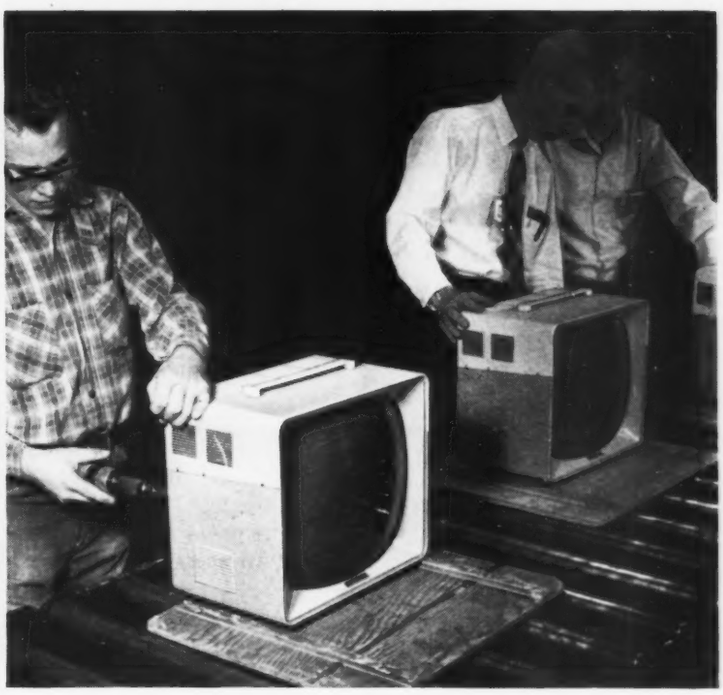
Schuster discussed wide belt sanding, which he described as "a whole new approach to finishing."

"Wide belt finishing is a method offering more than labor savings," he declared. "It provides a better product, because it offers a better finish." Moderately priced wide

Continued on page 48

NEW OFFICERS, Production and Cost Division: Phonse Bean, White Furniture Co., director; R. F. Wilder, Kroehler Mfg. Co., director; H. H. Connelly, Century Furniture Co., director; R. Bowman George, Mount Airy Chair Co., 2nd vice president; C. P. Reinhardt, Drexel Furniture Co., past president; Charles H. Prevost, Thomasville Chair Co., president; Charles Carey, Drexel Furniture Co., director; and John Parsons, Stanley Furniture Co., director.





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FABRICS & FIBERS
E. O. FRICKER

Basic Facts About Fibers and Weaves

All upholstery fabrics are generally made from one or more of three basic fibers: animal, vegetable and synthetic. Under the animal classification we have mohair, wool and silk. All of these are used in limited quantities today in upholstery fabrics.

The principal vegetable fiber is cotton. It is an easily processed fiber and a desirable one. It has price appeal and, of course, can be processed in either a very low quality or a very high quality fabric. Linen is used in limited quantities.

The most important synthetic fibers in upholstery today are viscose rayon, acetate and nylon. Viscose rayon has been popular for years and has continued to increase in volume selling. Acetate has become increasingly important in upholstery for its great flexibility in the styling of fabrics. To many customers, nylon is still the magic word. A greater volume, as well as a greater percentage of nylon upholstery, is being used today than ever before. It is becoming increasingly important in all types of upholstery fabrics.

Cotton is the oldest fiber and is used the most extensively in upholstery fabrics. This soft fiber is strong, long wearing, comfortable, takes dyes readily. However, it is absorbent and tends to show soil but can be improved with special finishes. Its lack of resiliency tends to channel its use to flat fabrics.

Viscose rayon has become one of the most important yarns in upholsteries in recent years and made the textile industry less dependent on cotton. It can be made into a shimmering, high colored satin or a commercial heavy textured frieze. Viscose will dye to practically any color, shade or hue. It blends remarkably well with other fibers. It is made with varying degrees of luster which give it a wide variety in styling effects. It wears well in dense pile or closely woven flat constructions. Its resistance to abrasive wear, its resiliency and soil resistance is fair. Naturally, the better quality the yarn, the closer the weave, the better the dyeing, the better the fabric.

Acetate is softer than viscose and has a more silk-like beauty. It is superb for use in blending. It is less absorbent than viscose. Acetate gives a luxurious brilliance to fabrics. One of its poorest characteristics in upholstery fabrics is its lack of resistance to abrasive wear. It should be used only in better constructions if service is desired.

Spun acetate and spun rayon are made by cutting into short lengths the filaments after they are extruded from the spinning box and then, usually, crimped. They can be used alone or blended with other fibers. This staple stock is spun into yarns known as spun acetate or spun rayon. While these are less costly than many other fibers, their wide use is dependent on the desirable qualities that they impart to a fabric. These spun fibers give fair to good wear, depending on the constructions of the fabric.

Nylon's resistance to abrasive wear is exceptional. It has a low moisture absorption, which helps it resist soil and makes it readily cleanable. It can be spun or blended for many different visual effects. Combinations of filament and spun nylons in tonal colorations are attractive and very salable. Its resiliency, in proper constructions, makes nylon highly desirable for pile fabric use. Excellent colorations are possible and its resistance to fading is fair. The pilling or fuzzing of nylon is practically a thing of the past, except in very cheap constructions. We have found, at Kroehler, that regardless of price or quality of a flat nylon, it must be backed with latex or some other similar preparation so as to insure its holding seams and giving satisfaction. Backing helps to eliminate the filling threads from sliding off the very slippery

nylon filament warp threads after the furniture has been used several months.

All of the above yarns may be dyed in several ways.

Piece dyeing accounts for practically all pile fabric production and is becoming more important in flat fabric operations. After the fabric is woven it is dyed in the piece. If certain yarns, say acetate and viscose, are used in the fabric, it may be cross dyed. That means obtaining different colors or shades in a single dyeing operation by using different dye chemicals in the same dye bath, one that will dye acetate and not viscose, and another that will dye viscose and not acetate. A variety of colorations, as well as tonal effects, are achieved in this way.

Yarn dyeing is generally used in flat fabrics. The yarns are dyed prior to weaving. In most cases the color fastness and finish is much more satisfactory in yarn dyed fabrics. It is more expensive than piece dyeing of upholstery fabrics; production and deliveries are hampered by comparison.

Solution dyeing is becoming increasingly important as it offers a definite extra in selling at the retail level. Solution dyed fibers are manufactured by mixing the pigment in the basic solution of either the acetate or viscose, prior to the filaments being extruded. The color is locked in and the resistance to fading is extremely high. The principal rayon solution dyed fibers are Jetspun and Colorspun. Main acetate solution dyed fibers are Chromspun and Celeperm.

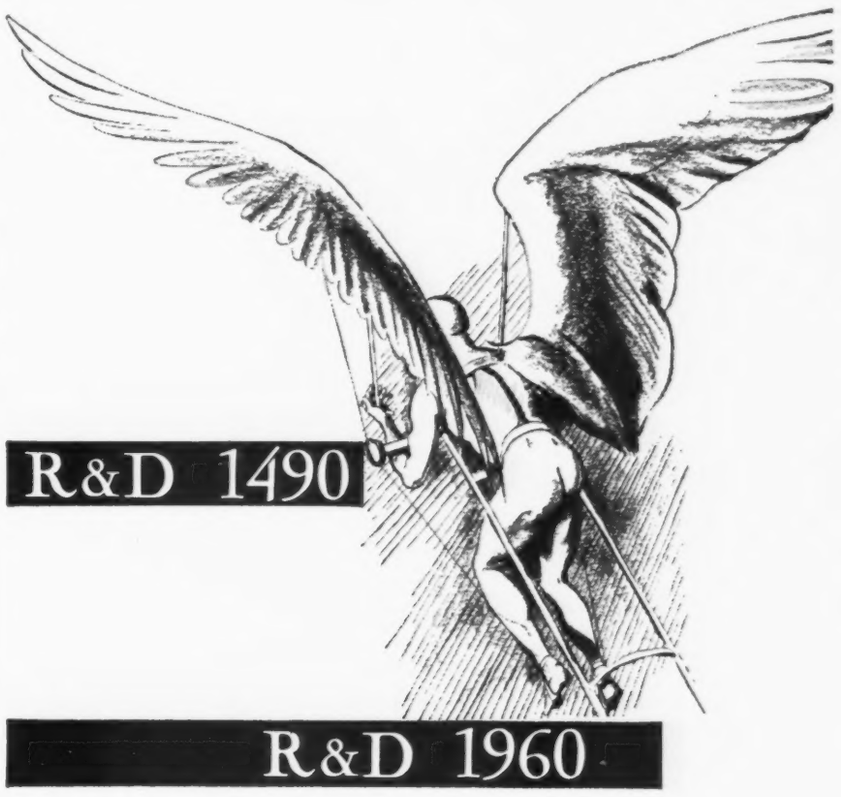
Textured yarns are a relatively new development in upholstery fabrics. They may be called lofted or bulk yarns. In bulking, yarns are treated either chemically or physically so as to have a greater apparent volume. The advantages of textured over filament yarns are that they are softer, have a delustered or spun appearance and give a fuller coverage. The principal textured yarns are Estron and Cellaire which, actually, are bulked acetates; and Taslan, Banlon and Tycora, which are bulked filament nylons. The principal advantage of all the bulked yarns is in their appearance. The disadvantage of all of these is their higher cost. The tendency has been, in the bulked acetates, to produce only fabrics that give very poor abrasive service.

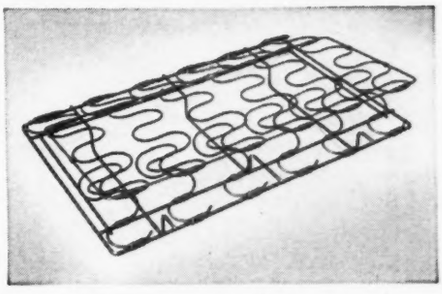
The blending of fibers gives to fabrics special styling, pricing or wearing qualities. Sometimes the blending raises the cost, sometimes it lowers it. A blend should not necessarily be considered inferior. The fibers are blended for a definite purpose—to increase wear, to minimize shrinkage, to resist soil, to add beauty, etc.

Any of these fibers may be processed in a multitude of ways for a variety of uses and effects. Some of these ways are as follows:

The process of converting fibers into yarns or threads is called spinning. Spinning means drawing out large masses of fibers parallel and twisting them into uniform strands or threads of continuous length. The product is then called yarn. It is a similar operation to pulling taffy. You pull it and you double it. This is done again and again and finally, after hundreds of times, all the fibers have become parallel and the resulting thread is twisted for strength. Generally speaking, the more twists per inch, the smoother, the stronger and the harder finished the yarn. For example, one of the prime differences between a woolen and a worsted

Continued on page 16





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Continued from page 15

fabric, such as used in suitings, is the twist of the yarn. The former fabric is rough, harsh and loose in appearance, whereas, the latter is hard finished and smoother.

There are special twisting and spinning processes which develop yarns of unusual character. For example, the boucle yarn which gives a knotted or curled effect; the seed, nub or slub yarn which gives a harder texture so desirable in upholstery today.

THE FABRIC WEAVES

There are four weaving terms that are commonly used which we all hear from time to time. They are, warp, filling, pick and end.

The warp means all of the parallel backing threads of the fabric that are woven lengthwise or those that go along the full length of the piece in the backing. The filling is the crosswise threads. If we speak about an end we mean one warp thread, one thread running lengthwise in the backing. If we talk about a pick we refer to one filling thread, or one thread across the fabric. If someone asks how many picks or ends the fabric has, it refers to the number of threads per inch. The closer the weave, the other factors remaining equal, the better and more expensive the fabric.

The chief selling features of an upholstery fabric are the surface effects, the color and the quality. Quality is generally thought of in the terms of how well it will wear, how slowly it will soil and how easily it can be cleaned. Surface effects are obtained by different weaves and different types of looms. All flat fabric weaves are derivatives of the three basic weaves, the plain, the twill and the satin. All pile fabric weaves are derivatives of either the frieze or the velvet. Any weave is a determining factor in the appearance and in the serviceability of the fabric. The texture of the weave may be loose or tight in construction, according to the number of ends or warp threads, and the picks or filling threads per inch.

Weaving, basically, is the interlacing of yarns at right angles. To obtain various effects the warp and filling threads are interlaced in different ways.

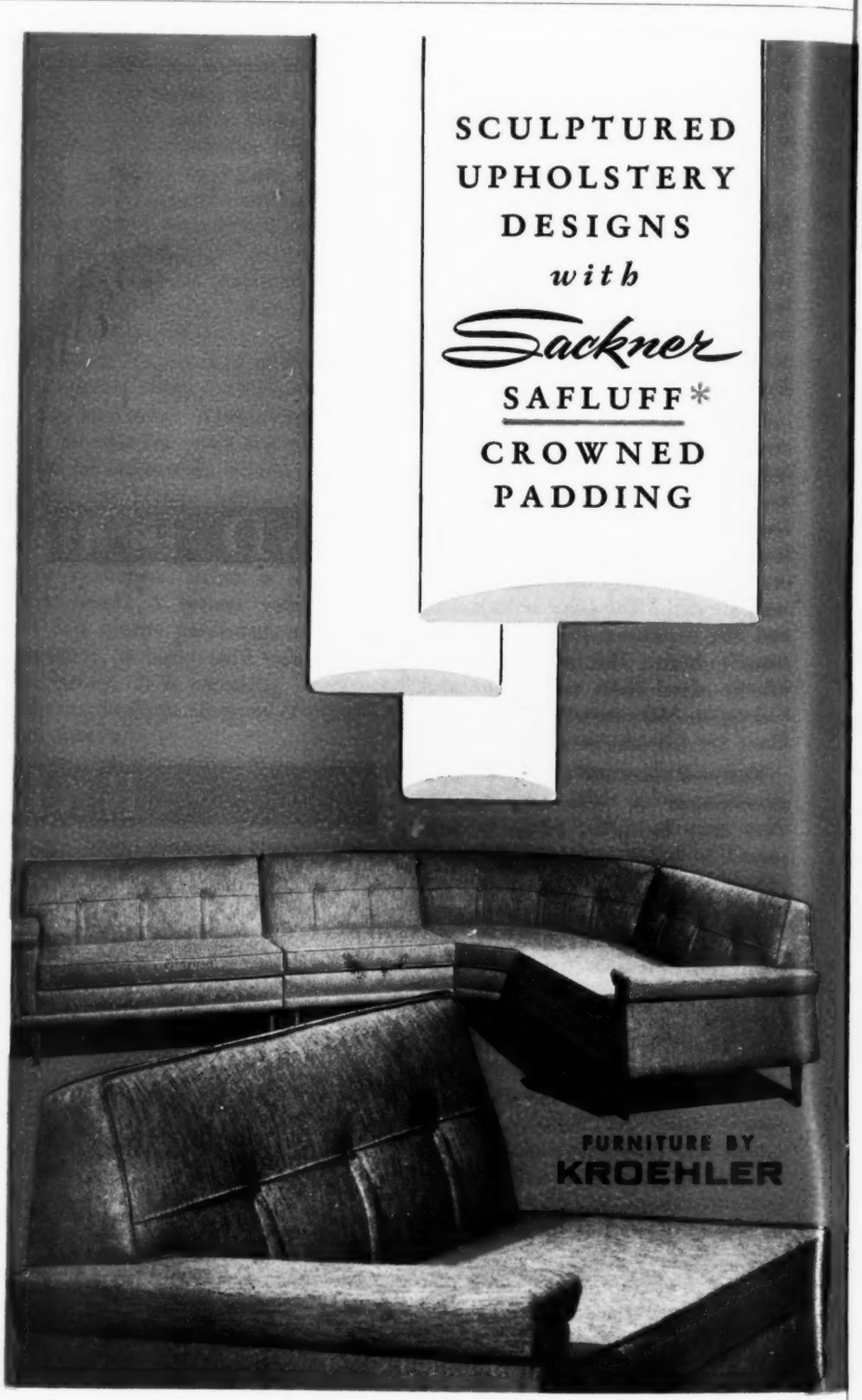
PLAIN WEAVE

A plain weave is the interlacing of yarns at right angles in which every thread goes over the other and then under. Each adjacent thread does the reverse. This gives a simple checkerboard effect. By use of different colors and sizes of yarns a variety of effects are obtainable, such as homespuns, shantungs, tweeds, etc.

TWILL WEAVE

A twill is a fundamental weave where the interlacing of yarns form small diagonal ribs or lines. This diagonal line is the telltale sign of a twill. A great many intricate and appealing fabrics use this construction; denims, herringbones, tweed, etc. A twill is very durable.

E. O. Fricker, author of this regular monthly feature, is Fabric Procurement Manager, Kroehler Manufacturing Co., Naperville, Ill.



SATIN WEAVE

The warp yarns are arranged to conceal the filling, thus making a smooth, shiny surface. This gives a polished look to the fabric. In a satin construction a warp thread interlaces with a filling thread and then floats on the face for four, six, eight, ten or some other even number of threads. When four threads are floated it is called a five shaft satin. This is arrived at by adding the original thread that is covered in the back to the ones that are floated. An eleven shaft satin floats the surface threads over ten filling threads. The higher the shaft number the greater the luster and the less the abrasion resistance and snag resistance. Many acetate and rayon fabrics are made with satin weaves to produce a luxurious appearance. The damask, brocade and brocatelle use the satin weave to produce patterns which show a great contrast from high luster to extreme dullness.

Several types of looms are used, depending on the type and size of the patterns. The plain loom is used for the plain weave. When weaving a small pattern, one that generally is not longer than an inch, it is necessary to change from a plain loom to a cam loom. When the pattern is larger, the Jacquard loom is used. This name came from its French inventor, M. Jacquard. It is similar to a player piano in operation. Cards are cut to form the pattern, similar to player piano cards, and these control the weaving of the threads. Otherwise the operation is similar to other looms.

The plain, the cam and the Jacquard looms may be used to weave either flat fabrics or pile fabrics, but when weaving pile fabrics special attachments are necessary.

Basically, there are just two general types of upholstery fabrics: flat fabrics and pile fabrics. In flat fabrics, and you know them as tapestries, matelasses, brocatelles, damasks, tweeds, etc., there are just two sets of threads woven at right angles to each other.

All of the characteristics of any of these fabrics depend on just how those two sets of threads, which represent the wearing surface, are woven.

Pile fabrics differ from flat fabrics in that pile fabrics have what is called a "Third Dimension." In weaving pile fabrics an extra set of warp yarns is woven into the fabric in an upright position, either as loops or cut pile. Pile fabrics are woven on plain, cam or Jacquard looms, using special attachments. As the pile fabric weaves the pile warp yarns are raised to the top and are woven into the fabric in an upright position while at the same time the regular warp ends and filling picks interlace to form the flat surface which anchors the pile warp ends in their upright position. There are several types of pile fabrics. First, we have the plain cut velvet such as cotton or nylon velvet. In the old days we called these fabrics plushes. Plain cut velvets are woven two pieces, face to face, at the same time and split by a knife that goes back and forth in the loom.

The most important type of upholstery fabric today, in volume selling, is the frieze. There are two types. First, a plain or small patterned tweedy textured frieze, and secondly, the Jacquard frieze. A frieze is a pile

Continued on page 35

here's the secret of superb sculptured designs for as little as 1.4c per foot

*SAFLUFF Crowned Padding is a soft, resilient, uniformly shaped blend of new Cotton and Rayon fibres covered with lightweight white crepe. Because it is the *only* resilient crowned filler it has become the preferred material for padding rails, arms and tops of backs on fine upholstered furniture.

*SAFLUFF'S uniformity makes it perfect for applying design effects. Simple application cuts labor cost 86% or more. Just stitch backing cloth to upholstery fabric along one edge of the design . . . fit SAFLUFF snugly against this seam . . . complete stitching along the other edge, and fit the fabric to the furniture. Old fashioned "sew-and-stuff" methods can't match SAFLUFF'S uniformity . . . can't approach its low application cost!

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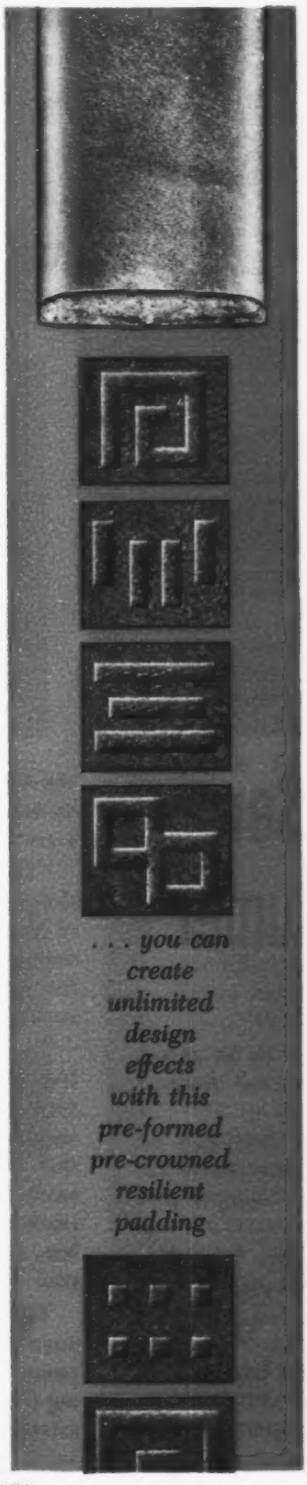

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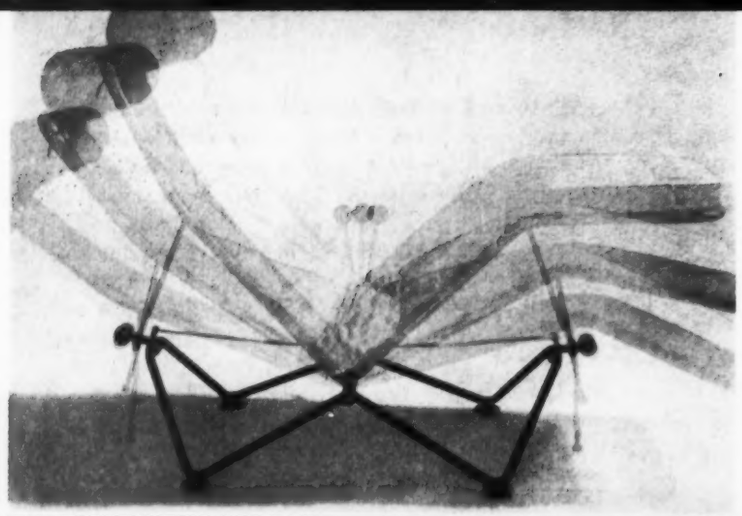

Furniture Designer of the Month

JAAP PENRAAT, New York designer.

FUNCTIONAL PHOTO illustrates the adjustability of the patio lounge chair designed by Penraat with a "gear shift" lever that manipulates the steel base. It was Penraat's prize-winning entry in the Second Annual NCBI Furniture Design Awards Contest, and featured a cotton insulated innerspring mattress and bolster.

REINFORCED PLASTIC and metal, two of Penraat's favorite materials, were used in this chair design.

Designer Should Serve Interests of Consumer

—Declares Designer Jaap Penraat

"To try and confer an attractive exterior on an object can never be the starting point in industrial design," according to Jaap Penraat.

(The geographical starting point for his ideas may be offices in either Amsterdam or New York, but one of his clients, KLM airlines, keeps some finished concepts permanently *en route!*)

"After the last war," he said, "the publicity for industrial design provoked in many circles the erroneous opinion that this term is applicable to the formal beauty of the object. Thus many manufacturers, designers and members of the public think that all industrial design has to do is satisfy a definite set of rules and that this term is basically nothing more than a slogan invented by a group of men who want chairs and radios without any ornament. They are under the impression that there exists a movement in industrial design aimed at transforming the world into a rectilineal and smooth whole."

"The form of any industrial product is determined by the project. Any decision taken during the conception of the object is also a decision taken in regard to the design, because with the choice of construction technique the form is at least partially fixed and even exercises a certain influence on it."

"If we maintain that something has to be done to perfect industrial design," he concluded, "let us not waste time re-designing casings . . . rather let us produce chairs on which one can sit without breaking one's back, cups that do not dribble, washing machines that wash more easily and cost less. There are too many objects on the market which are badly designed, too expensive and useless, all products of a mistaken policy in the field of industrial design."

The clients who react to these views with that happy amen, "I'll buy that!" are an international array of companies and individuals in Europe and the U.S.A., including GE, KLM, and many others. Penraat's recognition also extends to citations like the Furniture Design Award of

Continued on page 32

NEW *Flex-Rol* RUBBER CUSHION-EDGE

Gives You Both Foam "Soft" Comfort Sheer-Line Stability

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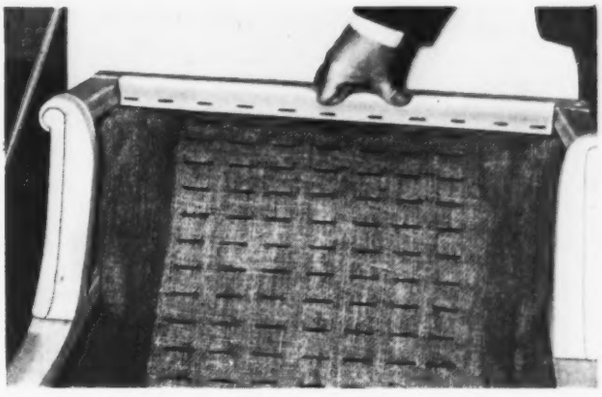
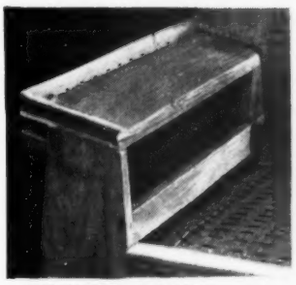
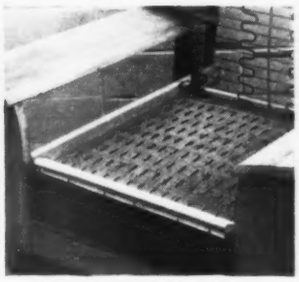
ON HARD SEAT EDGES! New Flex-Rol adds a foam "soft" resilience never before possible. You can demonstrate and sell the difference!



ON BACK EDGES! New Flex-Rol fills spring gap—gives a "soft" cushion "quality feel" with beautiful, *stable* Sheer-Line tailoring!



ON HARD ARMS! Flex-Rol makes edges "soft" and comfortable with a true luxury feel.



ON SPRING EDGES! Flex-Rol is more flexible—gives Sheer-Line shape automatically!

Perm-A-Lator's new pre-formed foam rubber Flex-Rol adds new "Soft" comfort . . . better, more stable "spring back" Sheer-line tailoring. Two "PLUS" quality features you can demonstrate and sell! Flex-Rol flexes all ways for quick, easy, sure application (staple, tack, hog ring or glue) stretches for variable firmness. Eliminates hard edge fabric wear-tear spots, leg discomfort, ugly edge gaps. Edges are uniform, straighter, neater automatically! Get the facts—write for samples today.

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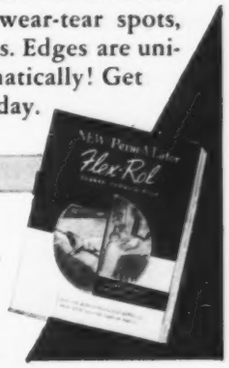

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How case goods manufacturer entered upholstered field

BY CAROLYN KNUEMANN

Furniture construction and in-plant photographs by R. A. Helmers, Editor.

FLAIR SOFA is offered in four lengths, four wood finishes.

CUTAWAY shows foam rubber topper on arm.

TWO CHAIRS in Flair line retail from $119-$149, depending on fabric. Exposed wood is mahogany. Hooded casters are optional on chair at left.

FLAIR CONSTRUCTION includes helically-tied base springs; cross braces padded with rubberized curled hair to eliminate noise.

Flair for Quality—

QUALITY is the watchword at Flair, Inc., at Lenoir, N. C., a wholly owned and independently operated subsidiary of Bernhardt Industries. The company is a new concern, making medium-priced Contemporary upholstered furniture, including sofas, sectionals, chairs and ottomans.

Heading the operation today are: John C. Bernhardt, president; Wesley Collins, production manager; Edgar G. Jones, sales manager; Henry Wilson, Jr., purchasing and scheduling; John Collett, product development; and Edmund J. Chimleski Associates, design.

Incorporated on March 24, 1958, the company started plant construction the same month. Shooting up with record speed, physical facilities were completed, a work force was trained, and production was started.

Continued on page 23

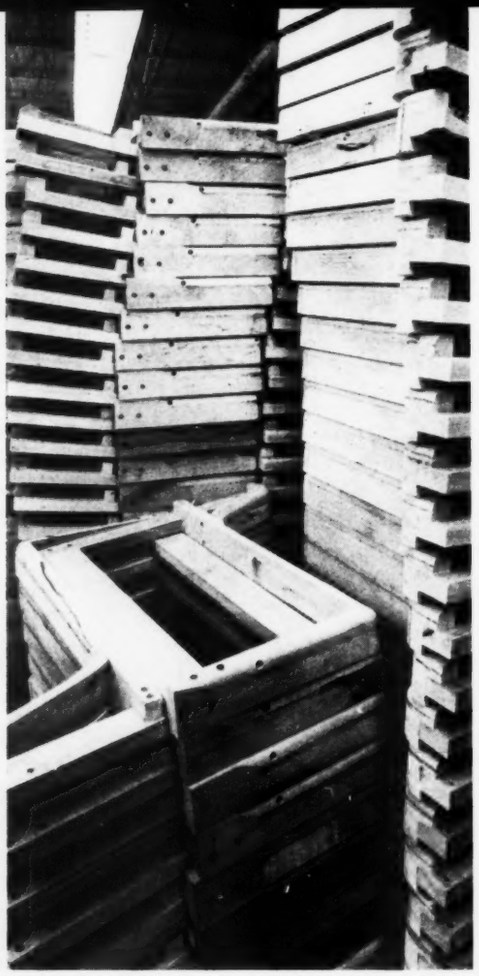
What's Inside A Flair Chair:

CUTAWAY OF CHAIR shows 5/4 hardwood base rails with spring unit secured by drive screw. Illustration, bottom left, shows details of polyether cushion and rubber edging on top of platform.

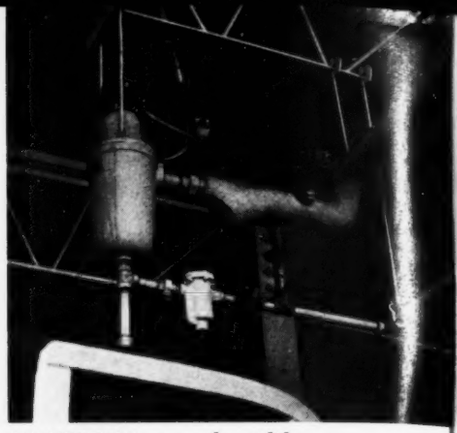
GOOD TAILORING is indicated by stripe matching and neat welt lines.

FRAME CONSTRUCTION includes notched Honduras mahogany leg, screwed and glued to curved hardwood frame. Additional sturdiness is assured by large corner block which is also screwed and glued.

DeVILBISS spray equipment.



FLAIR FRAMES are sub-assembled as above.



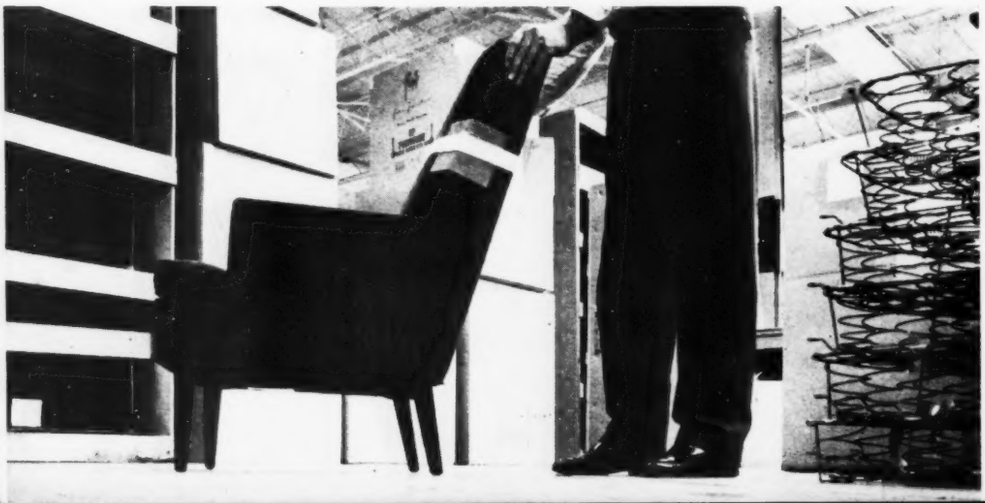
ARMSTRONG steam humidifier.

B. M. ROOT boring machine.

TANNEWITZ band saw.

DOUBLE WELT boxing machine by Apex is operated by Constance Parsons.

TERRAZZO TILE, below, is used to check levelness of furniture legs.



WOLF cloth cutting machine.

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Stressing modern, efficient new some of the reasons for its success.

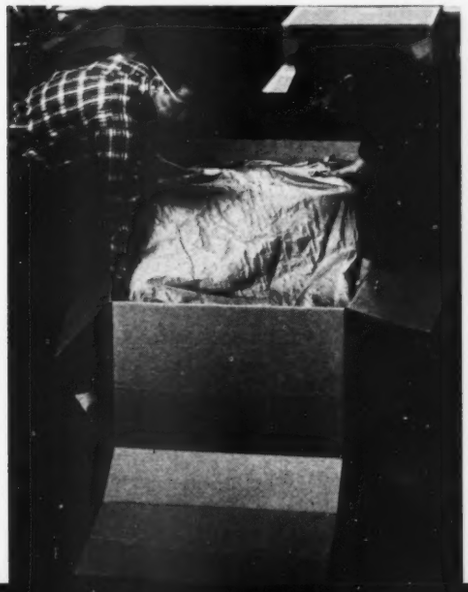
For frame construction, kiln-dried solid hackberry stock—at least 1¼ inches thick—is used. All joints and corners are double-dowelled, screwed, cold-glued, and reinforced with corner blocks for extra heavy duty use. All frames are pulled up in clamps under a pressure of 100 pounds per square inch, and screws are driven by Thor screw drivers. No nails are used in the

Continued on page 26

LONG NOSE of Duo Fast gun permits speedy spring installation.

DRIVE SCREW, left is used in frame assembly. Right is leg leveling device.

ZIPPERED CARTONS are used for shipping—supplied by Owens and Carolina Container.



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Flair for Quality—

Continued from page 20

By August of the same year, Flair was shipping merchandise from Lenoir.

The brick and concrete block building covers 40,000 square feet, located on 42 acres of land, with a railroad siding. There is space for expansion.

Training operations and initial production had begun with a nucleus of 12 production employes, mostly skilled men. Additional men were put on steadily but gradually, to insure proper training in Flair production specifications and techniques. Today the company employs over 50 production workers, and is increasing the number continually.

The result of this plan, say company officials, has been high quality and satisfied customers from the very first day of operation. Percentage of customer claims or complaints on shipments is less than 1/100 of one per cent for the total period of production.

Stressing modern, efficient new equipment from the machine room through the shipping room, the company uses such installations as: Root vertical multiple boring machine (10 heads), C.R.A. Measurematic inspection machine, Cushion boxing machines, Wolf cloth cutters (circular and plain), Kirk & Blum plenum dust collection system with automatic load balancing, a specially designed leveling table to insure fit of sectional pieces, and many other devices of industrial engineering. The plant is equipped throughout with automatically controlled Armstrong steam humidifiers which maintain humidity control in woods, fabrics and filling materials during all in-process production stages.

A visit to the Flair plant reveals some of the reasons for its success.

For frame construction, kiln-dried solid hackberry stock—at least 1¼ inches thick—is used. All joints and corners are double-dowelled, screwed, cold-glued, and reinforced with corner blocks for extra heavy duty use. All frames are pulled up in clamps under a pressure of 100 pounds per square inch, and screws are driven by Thor screw drivers. No nails are used in the

Continued on page 26

LONG NOSE of Duo Fast gun permits speedy spring installation.

DRIVE SCREW, left is used in frame assembly. Right is leg leveling device.

ZIPPERED CARTONS are used for shipping—supplied by Owens and Carolina Container.

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The "PLUMP LOOK"
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makes furniture cushions plump up fatter,

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EVERY dealer knows that many of his customers couldn't care less about slim, knife-edge cushion lines. These people like to have their furniture cushions pleasingly *plump*, generous in the middle and rounded at the edges.

New B.F.Goodrich *crowned* Ventifoam delivers the plump contour that many customers like, plus all the many benefits of genuine latex foam cushioning. What's more, with new BFG *crowned* Ventifoam you can fill the same cushioning space more luxuriously with the same amount of material.

New *crowned* Ventifoam may well be the best news in years for furniture manufacturers and retailers alike. It's still another exclusive from B.F.Goodrich —the one rubber company that consistently puts the furniture business first!

You get the same 4-way cost saving with new BFG *crowned* Ventifoam!

You save better than 20% over regular latex foam, without the quality loss of substitute "foams."

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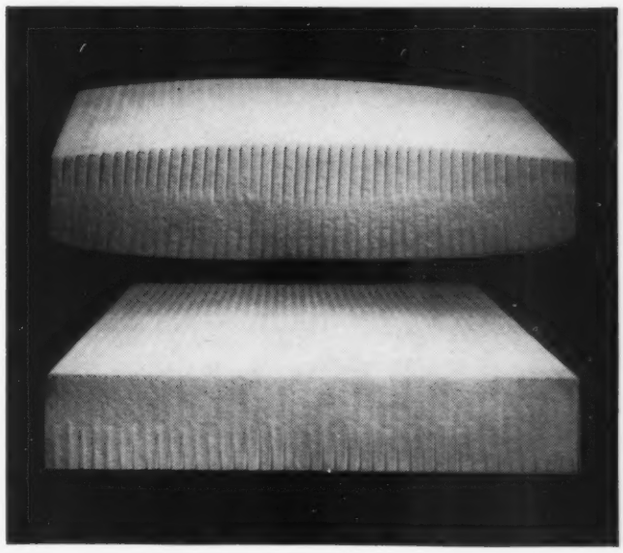
You save on inventory. Cut your cushions as you need them, in the shape you need them. Choose the sizes that fit your furniture best, 77" long, in widths of 21", 22", 23", 24" and 27".

You save on off-cuts. Equal compression and lack of coring make every square inch of Ventifoam usable.



Furniture looks better, feels better with BFG Ventifoam!

All BFG Ventifoam, crowned or straight contour, offers uniform compression resistance. Welt lines stay put, covers tailor easier and better. There's a lasting springiness, a definite and special feel to all Ventifoam that only the finest genuine latex foam can give. Every Ventifoam cushion delivers the exact feel you specify — controlled compression guarantees it! And 521 tiny cores per square foot make Ventifoam the *coolest* foam around! Why not get full Ventifoam facts today by writing: The B.F.Goodrich Company, 10 Derby Place, Shelton, Connecticut.

B.F.Goodrich

Texfoam cushioning

FOR DATA CIRCLE FDM NO. 1051

Flair for Quality

Continued from page 23

construction. Assembly glue is "Timbond," a polyvinyl resin adhesive made by Armour.

Honduras Mahogany is used for all exposed parts.

As in case goods procedure, the lumber enters the plant at the cutoff saw. There it is cut into lengths required for side rails, front rails, stumps, arms, top backs, and other parts. A Tannewitz variety saw with a tilting arbor is used. Individual parts then proceed to the rough and smooth planers for surfacing. Many of the structural parts, however, are curved by bandsawing, and are finished by automatic shapers, carvers, and such.

Both multiple and single spindle automatic borers by the B. M. Root Co. are used for drilling holes for dowels. Dowel glue is applied with a new automatic atomizer which covers the sides as well as the bottom of the holes with a predetermined film of glue prior to insertion of spiral-grooved dowels.

After sanding, parts go to the assembly department. Sub-assemblies are made, then all component parts are properly glued and clamped together in the newest type of self-aligning compressed air clamps. While in the clamp, screws are placed in the correct spots, and corner blocks are added to make a strong, properly-assembled frame.

After the frame is completely assembled, it is taken to a leveling machine, where the legs are perfectly equalized in length. Throughout the entire manufacturing process, frequent inspections occur. At one inspection point every chair and sofa is placed on a smooth, even terrazzo surface for checking the level factor.

In the finishing room, exposed wood parts are given one of four color treatments: walnut, cherry, ebony, and blonde. These are the standard Flair finishes.

The firm believes that in the finishing department it has an advantage over some other upholstery manufacturers. Although Flair is operated by specialists in upholstery, it also draws on the years of experience of the Bernhardt organization in finishing processes and materials.

A DeVilbiss finishing system is operated. Materials are pumped from air-tight barrels.

The finishing department is equipped with sealed, explosion-proof light globes. The ventilation system pulls the fumes of finishing out—so fast that there is no fire hazard, nor are there complaints from workers about fumes in any other part of the factory, says the management.

The upholstering operation begins in the cloth room, where fabrics are cut and sewn to specifications. Flair has a cloth inspection machine — a Measure-Matic, supplied by Cutting Room Appliances Corp., of New York —which automatically unrolls, displays for minute inspection, measures, and re-rolls every piece of goods received. The machine therefore enables the operator to detect defects; and at the same time that it allows close inspection of the fabric, it removes any tension that may be present in the original roll, and rolls the fabric more loosely. The machine even inserts a measuring tape graduated in ¼-inch increments up to 60 yards. This simplifies checking of inventory on particular patterns by visual examination of the tape at the end of the roll.

According to Flair, the company was the third furniture manufacturer

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in the South to use such inspection equipment, and one of the few in the nation.

Fabrics are cut by cloth-cutting machines, supplied The Wolf Machine Co. The operator marks out the patterns according to precision-made templates, and then cuts the various pieces for cushions, backs, outside arms, panels, welts, and such.

Cushions are filled with Polyether, foam rubber, springs, or other filling material. Materials used by Flair for cushions and/or seats—to give shape, form, contour, and comfort—are: 24-ounce white cotton felt, 10-ounce burlap, and either Polyether or foam rubber. Armour and Co.'s curled hair is used in upholstery construction. Cushion boxings are run through cushion boxing sewing machines which sew the welting on at the same time. These machines, supplied by Apex Sewing Machine Co., are combined with boxing machines built by Union Special Sewing Machine Co. Other machines in the sewing room are Singer.

Flair takes pride in its own development of "an unusually fine polyether cushion which is superior to any used formerly by anyone," in the analysis of the company. This cushion is fabricated on the three-layer "sandwich" principle. The two outside layers ("the bread") are polyether. The middle layer ("the meat") is a thicker layer of polyether. The middle layer is cut thicker in the center than along the edges. The firm is convinced that this type of construction gives both added seating comfort and a slightly crowned effect eliminating the undesirable stark, straight lines of the ordinary polyether cushion.

Most important, Flair adds, the seating comfort of this construction is superior to many forms of more expensive constructions. It approaches the comfort of spring and down, but at a far lower price.

The company checks its foam supplies with a Wohler foam tester on which the IMA ratio is determined. Polyurethane foam is supplied by Firestone and by E. R. Carpenter. Foam rubber comes from Dunlap.

In the spring up department, each piece is carefully and separately processed. A specially constructed tempered steel coil spring unit is prefabricated to conform to the size and shape of the frame base and back.

Helicals are used as an extra means of stabilizing the coils by creating a strong, flexible platform spreading the weight over an extensive area. The firm feels that use of helicals is a Flair extra quality touch.

Another feature offered as a Flair extra is the use of up to 16 coils per chair. "Most medium-to-upper grade lines—if they don't use sinuous arc springs—use nine coils, and lines of lesser quality use as few as six coils," Flair emphasizes to its customers. "Our 16-coil construction provides greater comfort and more durability, and insures a full and uniformly distributed springing surface throughout the entire area of the seat."

Suppliers of springs units include: Carolina Spring Co., of High Point, N. C., and Hickory Spring Co., Hickory, N. C.

Spring units are attached to the rails by drive screws, furnished by Southern Screw Co.

Bottoms of sofas are fitted with band-sawn curved seat slats which accept movement of the spring base,

Continued on page 28

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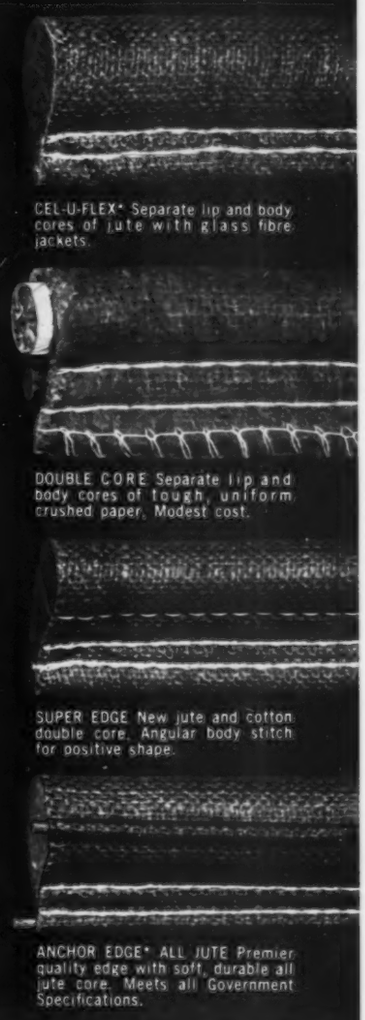
Here are just a few of SACKNER'S job-tailored, quality engineered spring edge designs . . . various styles of patented ANCHOR EDGE, conventional spring edges of various materials and construction to suit particular needs, and specialties for the unusual application. Each is designed to reduce manufacturing costs through advanced construction features that make application fast, easy and permanent. Each is produced to rigid quality standards to give permanence and that "tailored look" to your finished upholstered piece. And Sackner service means added satisfaction . . . most orders shipped within 24 hours. Be "wise" . . . try Sackner spring edges . . . write for details and samples!



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FOR DATA CIRCLE FDM NO. 1072

Flair for Quality

Continued from page 27

cushioned on the inside with a strip of curled hair to eliminate noise. The inner construction of Flair furniture utilizes a 14½-ounce sheet webbing behind and under the springs. A 10-ounce burlap covers the tops of springs.

Springing and webbing applications are accomplished with Duo-Fast air-powered tackers. The tackers have long noses reaching down through the springs and into close quarters.

The company is a staunch believer in rubber-edging advantages over spring-edging.

"When new, spring edge provides as much but no more comfort than Flair's rubber edge," it points out. "But a spring edge is less durable. In time it not only becomes less comfortable, but loses the clean, 'straight-edged' look so important to appearance." The edge, installed over the top rail, is wedge-shaped: 1½ inches thick at the forward boundary, and 3½ inches wide tapering to the rear.

Flair's back construction is a combination of 12-ounce white cotton felt, rubberized Hairflex (100 per cent curled hair, predominantly horse hair), the specially built tempered steel coil springs, 10-ounce burlap, and 14 ounce sheet webbing.

Seat construction consists of the tested combination of polyether or foam rubber, 24-ounce white felt, 10-ounce burlap, with the tempered steel 16-coil spring unit with helicals.

In upholstering, outsides are covered first with unbleached Osnaburg, next with a layer of cotton, and lastly the cover is applied. In customary division, the upholsterers at the Flair plant comprise: inside men who make the inside seat, inside arm, and inside back, fitting the cushion as required; and outside men whose job is putting on outside arm and back panels, and doing trim work.

Flair specialties are meticulous tailoring and careful attention to matching patterns, lining up stripes, straight welt lines, and such. Foam rubber padding goes on the tops of arms and on front rails, for softness and durability. After complete upholstering, a final detailed inspection determines neatness and accuracy of tailoring.

One point in quality control, particularly as to sizes, is Flair's practice of checking sectional pieces against a master pattern frame before springing—to ascertain that each sectional piece will match others in the grouping.

If any item is found not measuring up to Flair's quality standards, it is returned to the department responsible, for reworking.

Once an item has passed quality specifications, it is packed in a zipper-type carton, to enable the dealer to deliver the goods directly to the home in the shipping carton. Flair buys a form-fitting carton made by National Container Co. and Carolina Container Corp. A wood skid secures the bases of sofas, and the furniture is packed inside with a cellulose-type wadding material made by Cellu Products Co.

A choice of 150 decorative covers in four price ranges is available on all pieces. No COM orders are accepted, since the company is geared for maximum efficiency and minimum cost on a mass-produced quality line.

Self-covered platforms, and ferrule feet, may be specified.

Continued on page 73

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• *Plus Cleaner Cutting!*

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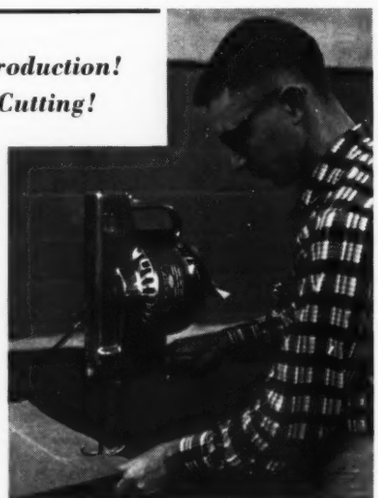

Photo courtesy of Flair, Inc., a division of Bernhardt Furniture Industries, Lenoir, North Carolina.

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The Wolf line includes a full range of cutting machines with straight or round blades—the ideal machine for cutting upholstery fabrics, plastics and filling materials, etc.

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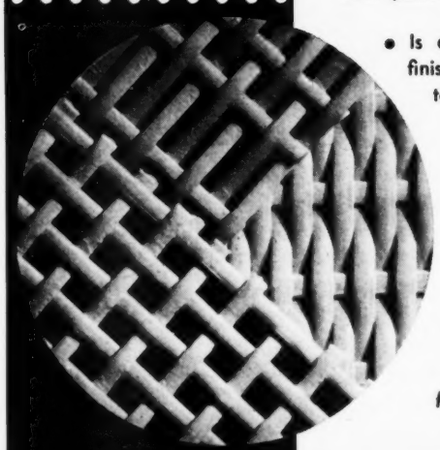

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Announcing the NCBI Furniture Design Awards for 1960

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All sales rights will remain property of entrants. Sponsor will refer interested manufacturers directly to designers.

In addition to the payment of eight cash prizes to winning entrants, the National Cotton Batting Institute will promote a selection of designs for sale to manufacturers. Interested manufacturers will be referred directly to the designers for negotiation. Send for complete information now. Contest closes June 6, 1960.

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FOR DATA CIRCLE FDM NO. 1061

Natural Finishes Score In Hardwood Designs

HIGHEST HONORS went to Jens Risom in the Production Furniture classification. His entry, a collection of contemporary office furniture, was in natural oil finish walnut. Above is a secretarial group; below is a conference table and chairs from the collection. Manufactured by Jens Risom Design, Inc.

Exotic hardwoods and natural oil finishes found themselves in the limelight as the winners of the annual "Design In Hardwoods" competition were announced March 5.

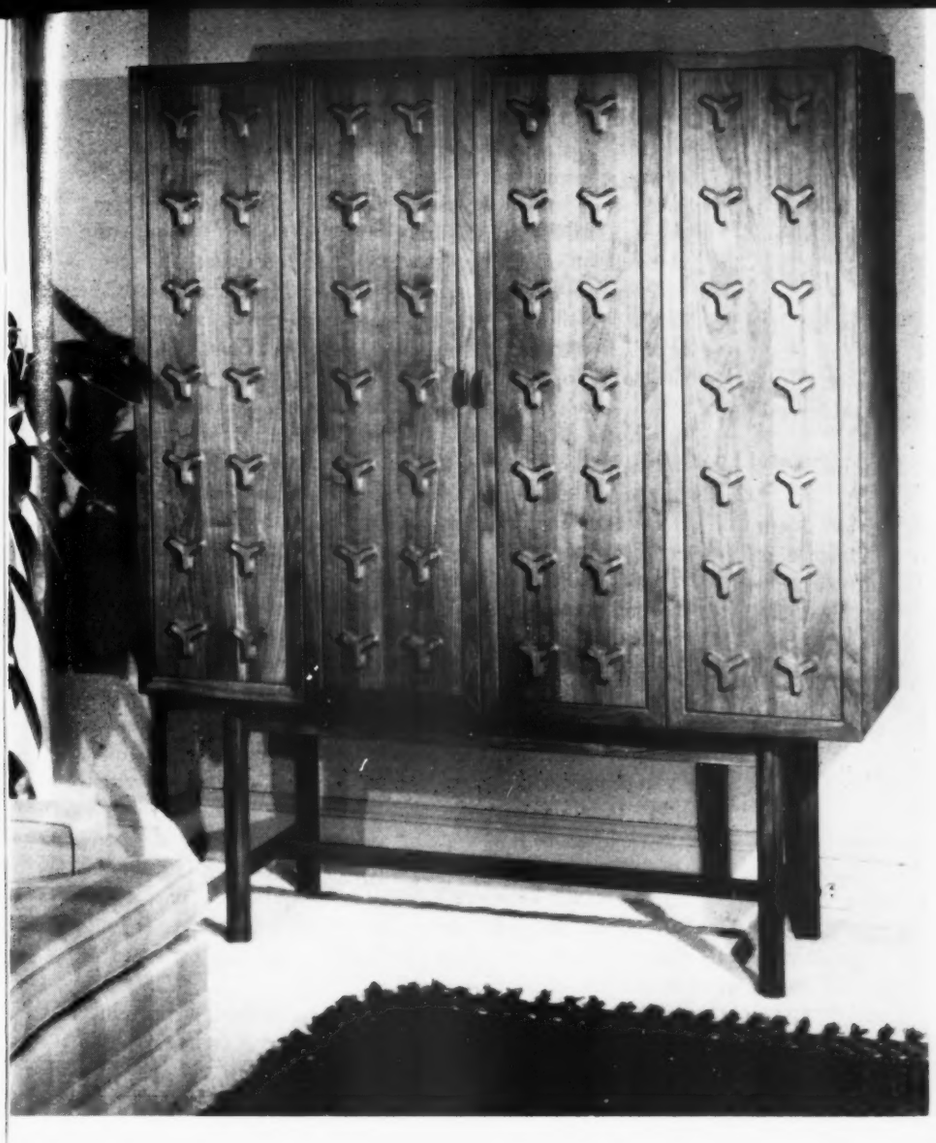
Rosewood, minzu, teak, odum, applewood, tulipwood, birdseye maple and zebrawood were used in new, imaginative ways by designers of winning entries. The perennial favorites—walnut, mahogany, cherry, oak and birch—still reigned as the choice woods. Highly figured veneers, burls and parqueted surfaces were used frequently as accents to fine cabinet woods.

Top winning entries will be displayed at the Hardwoods Exhibit at the Museum of Science and Industry, Chicago, according to Howard Gatewood, executive vice president of the Fine Hardwoods Association, contest sponsors.

Awards presented this year were in five categories: production furniture, architectural installations, custom furniture, serious sculpture, and general products. Twenty-seven awards were presented in the five categories, including seven Highest Honors. Top award winners in furniture categories are illustrated on these pages.

Honorable mentions in the production furniture category

Continued on page 32



HIGHEST HONORS also went to designers Jorgen G. Hansen and Jens Thuesen in the Production Furniture category for this walnut bar cabinet, shown at left. Solid walnut doors opened, below, show interior arrangement, including lighting. Finish is natural oil. Manufactured by Romweber Industries.

CUSTOM FURNITURE category was captured by designer Leon Gordon Miller, for his executive desk and side unit of Burmese teak, produced for an executive office of the World Publishing Co. Wall panelling, storage cabinets and chairs are also of teak. Cabinet work was done by Haynam Wood Products. Side unit is shown above.

Hardwood Designs

Continued from page 30

were awarded: Jorgen Hansen and Jens Thuesen for a rosewood breakfront; Vladimir Kagan, sculptured reclining chair; Barney Flagg, walnut buffet; Giacomo J. Buzzitta, office furniture in cherry.

Also honorable mentions, same category, went to: Draper-Hutchinson-Meyer, for a walnut roll top desk; Greta Magnusson Grossman, rosewood and walnut tables; Vladimir Kagan, sculptured extension dining table; and Peter Rooke-Ley, K'ang bench in walnut.

Two honorable mentions for custom furniture were awarded Sam Maloof.

Judges of the contest were: John Quinn, vice president, Chicago Chapter of American Institute of Decorators; Ray Esgar, first vice president, Chicago Chapter of American Institute of Architects; Robert Goodman, president, Chicago Chapter of the Industrial Designers Institute; Jack Collins, chairman, Midwest Chapter of the American Society of Interior Designers; and Daniel McMaster, director, Museum of Science and Industry, Chicago. ■

Designer of the Month

Continued from page 18

the National Cotton Batting Institute; the Signe d'Or in Brussels; and the Italian Carrara prize.

An all-around designer with experience in practically every industrial direction, he has just one starting point: function. After that come color, feeling, texture, availability, price and consumer acceptance.

"The criterion for the designer must be to serve the interest of the consumer," he stated. "It's in the interest of the consumer to receive goods at the lowest possible price and in best possible qualititative and functional order. This helps not only industrial design but also the distribution of the product itself. And despite the success certain producers have while succumbing to the public's taste, my thesis is nevertheless that the product which represents the best interest of the consumer will make the larger profit in the long run."

Admittedly, it is the esthetic appeal that influences a purchaser of a product and finally determines his choice, he said, though there are many separate esthetic answers to the same functional problem, and "it's rarely realized that other materials and other methods of construction could in many cases be chosen were it not for a too great following of traditional methods."

Penraat considers all materials grist for his "modern" approach, although he especially likes metal, plastics and chemical foam. His wife, Jettie, is a noted textile designer.

The designer sees a pattern in the evolution of design which may send designers and manufacturers in either of two directions, and land them in "opposing" camps.

"A chair is designed primarily to support the human body in a comfortable and restful position," he stated. "In this proposition the human body is a universally constant factor. The sitting position has easily ascertainable human (and humane) limitations, and once past these limitations the possibilities are nearly infinite. It is with the preoccupation with possibilities that the esthetics of design becomes important."

The esthetic appeal to a purchaser makes the product a symbol, and symbols rate as one of the primary needs

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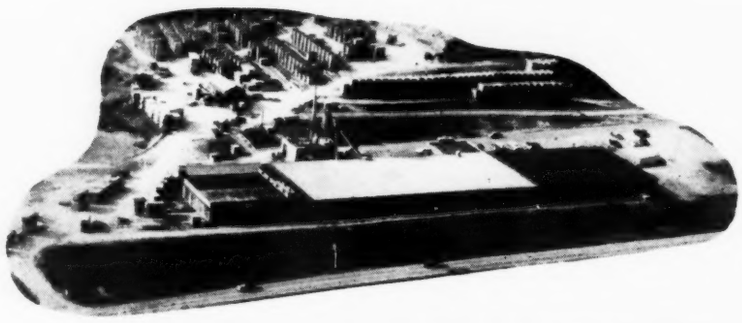

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of mankind, he said—the possessions with which people surround themselves at home symbolize their outlook on life, although it isn't a conscious process.

"The majority choose those styles which at a given moment happen to be appropriate or generally appreciated, and this basis of selection arises from a lack of any clear conviction, an unconscious fear of being conspicuously independent, or even of appearing ridiculous by not being what is currently considered smart. They simply want to follow a prescribed path, and feel uncomfortable when it fails to conform."

Penraat viewed a progressive minority interested in the propagation of new styles as the motive power behind change—not merely for the amusement of having something new, but out of a conviction that life has to be lived differently.

"These rebels oppose not only the accepted conventions of the old," he declared, "but also the inertia and superficialities which are anathema to the expression of an individuality in its own age. Every generation breeds reformers who want to live their lives differently from those who are content to do what is generally considered 'the thing.' The 'modern' or 'contemporary' design of any period is the design for which the minority group has been responsible. It repudiates mass ideology, mass security, and hence mass symbolism, surrounding itself with the symbols of its desire for individuality."

The designer said a group then emerges from the majority eager to join the leaders and to reflect upon themselves some of the glory to be shared . . . in effect, the original crusade eventually becomes a trend, and therefore assumes a quality of respectability which makes it acceptable to the masses. The new forms become symbols for old, unaltered ideals—the "functional" furniture of today is the "colonial" furniture of tomorrow.

"Where does the designer stand in this majority-minority contest?" Penraat asks. "He, too, feels the urge to symbolize his ideals in his designs, and the way he does it depends on which side he chooses. There are designers in both camps, as well as those who belong to neither, but the basis of all good design in integrity of purpose—so long as his work is not shrouded in hypocrisy, a designer can make his choice with freedom and without offence to his conscience."

Penraat is a published writer on design, with bylines in a variety of European and American magazines and newspapers, and has served on several design juries, Triennale Milano 1957; Signe d'Or 1957, 1958; Brussels Fair 1958, and Expo Brussels 1958. He is a member of the American Society of Industrial Designers, chairman of the interior designers group of the Gebonden Kunsten Federatie, and secretary of the Kring van Industriele Ontwerpers.—*David LePage.*

Designers: List Your Firm Name and Services in FDM's Classified Section. See Page 73.

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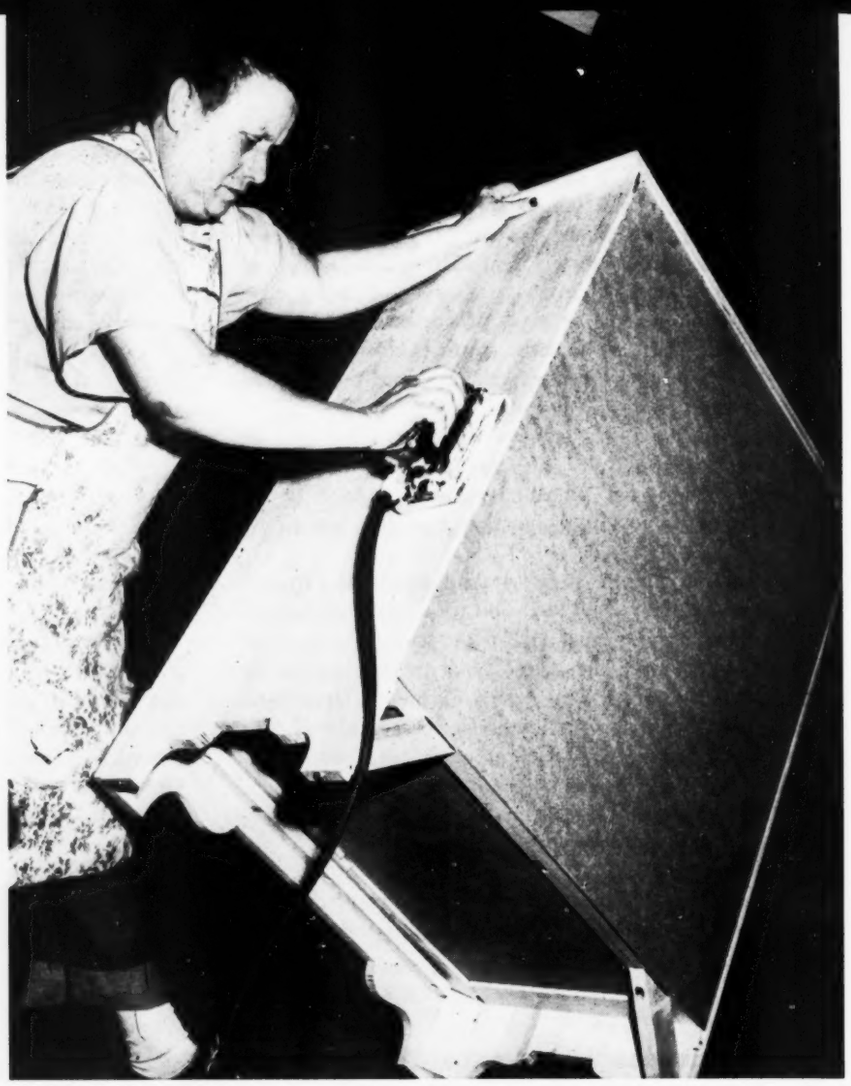
FURNITURE TOPS • CASE GOODS TOPS • SCHOOL FURNITURE TOPS • FABRICATED PANELS

FOR DATA CIRCLE FDM NO. 1060

MECHANIZED EQUIPMENT is used in the Dearborn factory, as seen in this scene in the rough mill. Photos and data courtesy The Dearborn Co. and Hardboard Association.

INSPECTION POINT—Drawers are checked here for proper fitting.



HARDBOARD IS USED for this case back, one of the units in the Provincetown line. Piece is being sanded prior to finishing.

Why Dearborn Uses Hardboard In Furniture Construction

Hardboard is playing an important role in the manufacture of quality furniture by The Dearborn Company, Oshkosh, Wisconsin, and even greater use of the reconstituted wood product is yet to be made, reports S. T. "Tom" Ginsberg, production manager.

Dearborn's 85,000-square-foot factory turns out 800 pieces of furniture daily, including Dearborn's prized Provincetown Maple, an Early American collection.

Hardboard was first used to make slip seats for dinette chairs at a substantial saving over material previously used for this purpose, according to Ginsberg.

Today, Dearborn buys hardboard in carload lots for other end uses in the company's bedroom, dining room and living room furniture.

Even now, Ginsberg points out, hardboard is being used in the Provincetown Maple line. Featuring more than 100 pieces in open stock, Provincetown is a middle and upper-middle income bracket furniture, and accounts for a sizeable per cent of the company's five million dollars annual sales.

Shipped to Dearborn in 4′ x 6′ panels, hardboard is cut by panel saws in the factory to form backs for chests and dressers, dust panels, mirror backs and sofa bed bottoms (providing the storage space for pillow and blankets). Moreover, predicts Ginsberg, it won't be long before additional uses are made of hardboard in drawer bottoms and drawer backs, Hutch backs and China backs.

Dearborn's close quality control over production provides an excellent test of the qualities of hardboard which are important to the furniture manufacturer, Ginsberg says. Each piece of furniture in the Dearborn production line must pass seven inspection points from the time the parts are machined until they emerge as finished merchandise.

Three of these check points involve a complete, overall examination by a trained inspector.

The seven inspections, which apply to Provincetown Maple and other Dearborn furniture as well, take place (1) at the machines, a major inspection as each component is turned out;

(2) during sanding operations; (3) at the first assembly point; (4) following assembly for poor glue joints, splits or cracks in the wood; (5) prior to staining or lacquering, the second overall inspection by an inspector; (6) before applying stain by the stainer, and finally (7) a third major inspection before the unit comes off the conveyor line.

Ginsberg explains that the 300,000 square feet of hardboard which Dearborn consumes annually in its medium-sized plant results in:

1. A substantial saving in the original cost of material. "Hardboard means a 50 per cent saving in terms of present day costs when compared with the material we previously used for the functions now performed by hardboard."
2. Saving in time and labor costs and waste. "Hardboard works just like wood and is handled by conventional wood-working equipment while at the same time eliminating many of the undesirable features of wood. Because hardboard is knotfree, grainless and uniform in surface, the panels can be cut to desired sizes and shapes with a minimum of waste.
3. Stability. "The use of hardboard, particularly as backs and dust stops in case goods, strengthens the entire unit," because hardboard is dimensionally stable in all directions.
4. Durability. "Hardboard is crackproof, splitproof, and because it is grainless, there is no grain to raise and cause splinters."
5. Uniformity. "Hardboard's uniformity in color and surface is especially important to our finishing operations. Hardboard case backs, for instance, are given a sprayed coat of lacquer or stain along with the wood in order to achieve uniformity in appearance. Hardboard's smooth surface simplifies the process."

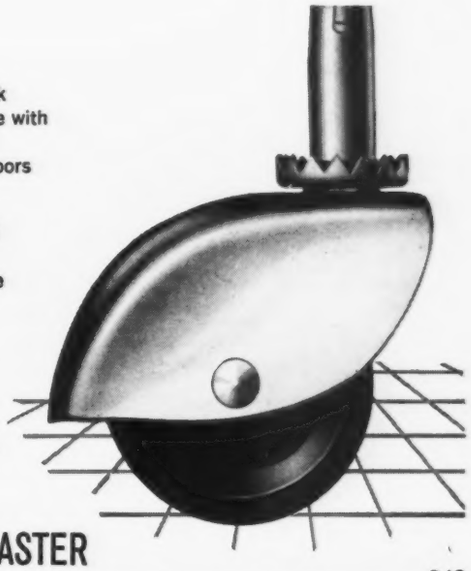
In addition to the fact that hardboard contributes to the quality of the Provincetown line and helps hold production costs down, Ginsberg adds that hardboard some day will be looked upon as a sales feature. "The use of hardboard will make it possible for manufacturers to improve other features of their merchandise." Ginsberg foresees the use of hardboard as an exposed or semi-exposed material in the Provincetown line. Drawer bottoms and perhaps drawer backs are the next steps, he feels, followed by the use of hardboard for Hutch backs and China backs. ■

Fabrics & Fibers

Continued from page 17

fabric which is composed of loops. Threads are woven over a series of wires which form loops.

Now the characteristics of wearing, soiling, cleaning and fading, the features most wanted by retail customers in an upholstery fabric, depend on two things. First, the type of yarn used and second, the weave. In other words, is it a flat fabric? Is it made of cotton? Is it made of nylon? Is it a pile fabric? In my next article I will define these performance characteristics.—*E. O. Fricker.*



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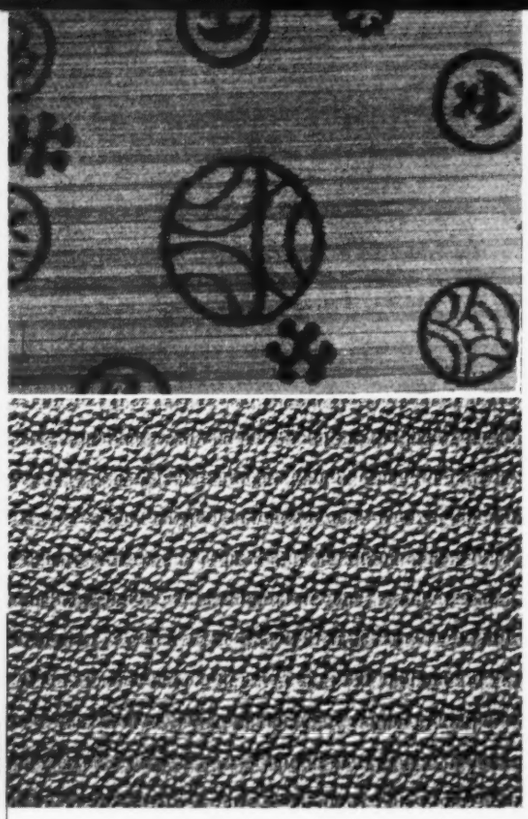
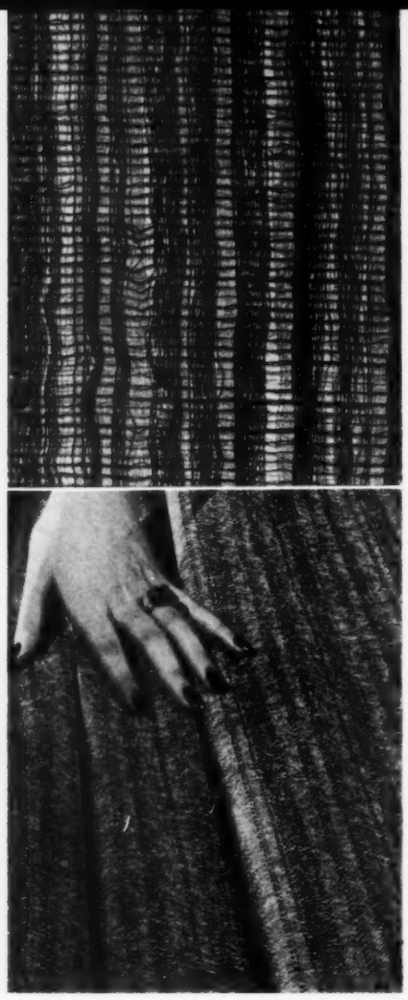


Top to bottom—

SILKADE Boltaflex from General Tire & Rubber Co. has a new tone on tone effect giving the feel and appearance of silk.

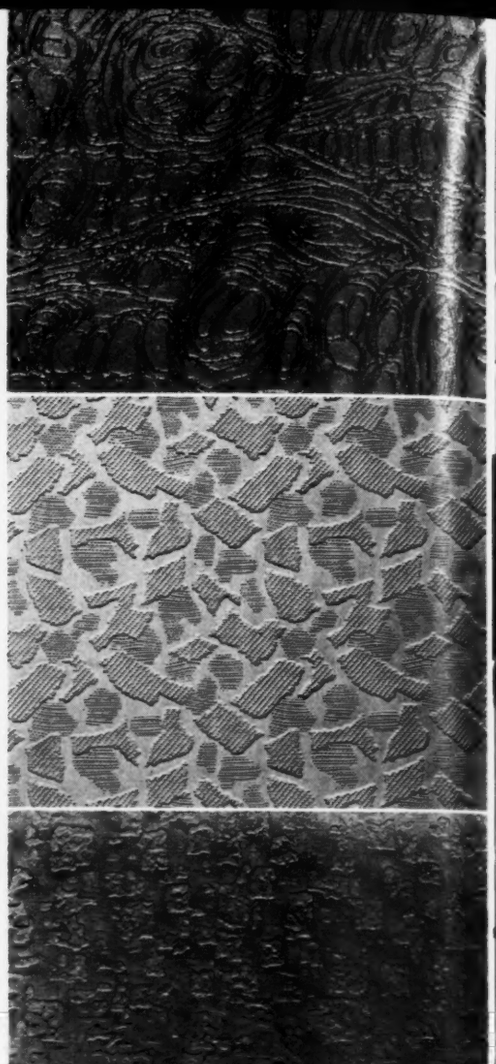
BEDFORD, in Coair line of Interchemical Corp., has heavy vinyl striping for wearing surface.



Top to bottom—

GOLDEN FLEECE, elastic Colovin from Columbus Coated Fabrics Corp., is available in 54 inch heavy weight vinyl in 11 colors.

HORIZON, offered by Masland Duraleather, has gold flecks on a richly textured tweedy background.



Top to bottom—

DELPHIC, non-directional design pattern in Dupont's "Fabrilite" line, has metallic gold print in valleys of design.

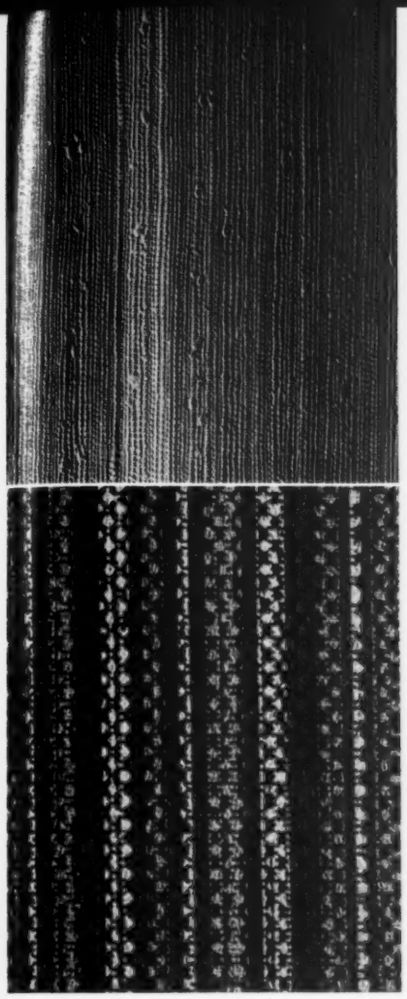
JIGSAW, designed for commercial utilization, is produced in supported material by Federal Industries.

PHARAOH, featuring a maze of irregular shapes resembling hieroglyphics, is in Koroseal from B. F. Goodrich Co.

What's New In Vinyls?

What's new in vinyls? Almost everything! Colors, tones, shades, textures, designs and appearance. Colors are more vibrant and striking; many are keyed to researched consumer demand; some have never before been offered in the vinyl market. They are in muted tones, in subtle shadings and in combinations coordinated with fabrics and decorating lines. Many new patterns are featuring metallic colors in solid tones and metallic threads are used in flecks or are interwoven on the vinyls. Designs are featuring stripes, panels, filigrees, and non-directional designs. Some lines resemble silk, linen, shantung, chintz, and leather, while many are keyed to specific lines as modern, traditional, contemporary, Early American, Danish and provincial.

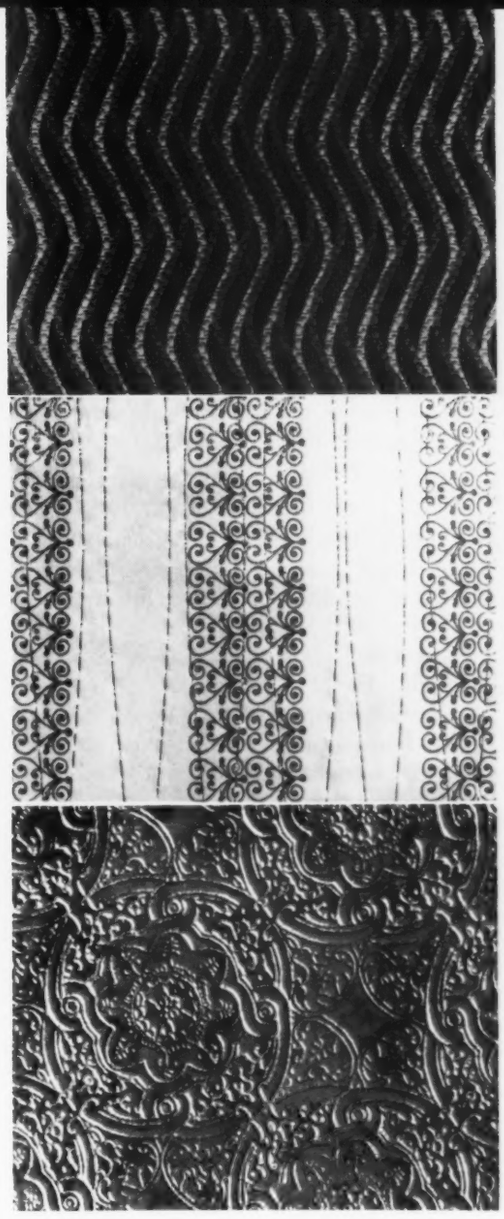
Whether you are looking for supported, unsupported or the newest type of breathable vinyl fabrics, the 1960 line is new—new enough to meet any demand of the designer, furniture



Top to bottom —

KENYA, elastic Naugahyde from U. S. Rubber Co., correlates multi-bands in different patterns of the same color with solid decorative colors.

FILIGREE, elastic Plyhide from Plymouth Rubber, is colored and designed by Lawrence Peabody in Early American tones.

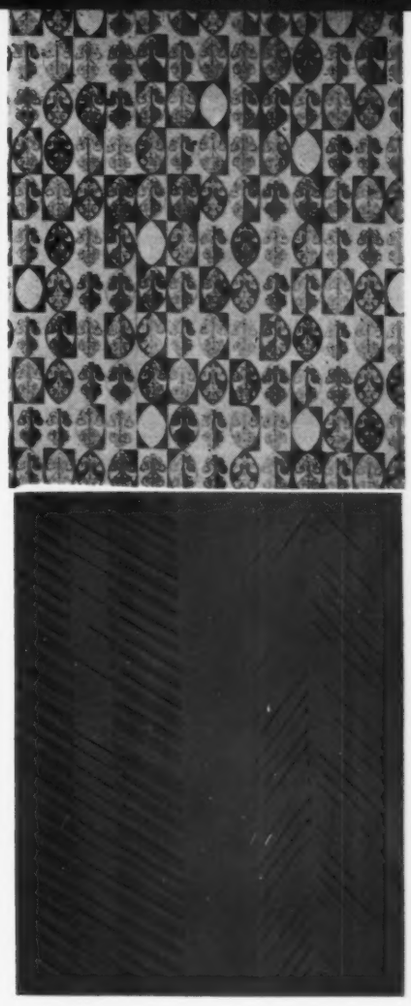


Top to bottom —

ZEPHYR, a Ventilan pattern from Landers Corp., features breathability, soil resistance and a non-slip finish.

GOLDEN SABLE in Wataseal by Harte & Co. incorporates an interplay of Mylar threads in the vinyl fabric.

FLORENTINE DESIGN in a richly embossed vinyl is one of the many patterns offered by the Plasticmakers of England.



Top to bottom —

AUTUMN, one of eleven new designs in upholstery vinyl from the Departure line of Denst & Soderlund, Inc.

THATCH ROWS, a 28 ounce vinyl in beige, yellow, red and blue colorways, is being introduced by Jack Lenor Larsen.

For sample swatches or other information contact manufacturer or circle appropriate number on reader service card

manufacturer or upholster. Listed below are a few of the new patterns being offered by some of the top suppliers to the industry.

BOLTAFLEX. Among new patterns in the new breathable line which has millions of tiny pores allowing free passage of air for coolness and comfort is Oracle, a geometric design with metal-flecked colors of Burma Gold, Palmetto, Opal Green, Peacock Blue and others. The Lorraine pattern has a provincial look and resembles the Lorraine Cross with cross and rosette designs alternating in rows, giving a diamond-type shape, and is offered in 8 striking colors. The breathable type patterns can be used with the regular line of supported Boltaflex vinyl, one of which is Silkade, a subtle tone on tone print with a silky texture, in a wide spectrum of colors. Another design, Las Vegas, has a luminescent "Glo Leather" effect and is available in 13 striking colors. Manufacturer—*The General Tire & Rubber Co.*

Reader Service Number 400

COAIR-COHYDE. Coair material is a cloth fabric coated with vinyl on the wear surface by a special patented process. The Bedford pattern in this line features heavy vinyl striping to provide wearing surface, while the fabric between the vinyl stripes provides moisture absorbency. According to the manufacturer, the Coair material has undergone 50,000 abrasions (equivalent to a lifetime of use) on a Wyzenbeek tester. The Cohyde line, a leather-like upholstery fabric

Continued on page 38

New In Vinyls

Continued from page 37

especially manufactured for chair arms and backs, is color coordinated with Coair. Both lines are available in ten colors and can be obtained in additional custom colors upon request. Manufacturer—*The Interchemical Corporation.*

Reader Service Number 401

COLOVIN. Newest pattern in the line is Misty, a subtly shaded textured design, available in 15 popular decorator colors in elastic vinyl. Another pattern, Golden Fleece, is available in 54-inch width, heavy weight, in celadon, flame, yellow, aqua, jade, pink, beige, blue, brown and white. The British Calf pattern, introduced in medium weight elastic, is now available in two new weights; a trim weight elastic vinyl fabric and in .012 gauge unsupported vinyl sheeting. The medium and trim weights are available in 13 promotional colors and unsupported line is available in 8 colors. Manufacturer—*The Columbus Coated Fabrics Corporation.*

Reader Service Number 402

DURAN. A distinctive and fresh pattern, Horizon, has scintillating gold flecks on a richly textured, tweedy background, in high fashion colors in elastic fabric back for living room furniture. Another pattern, designed for simplicity and good taste for dinette furniture, is Winslow, available in all-vinyl Duran in a range of 8 colors. The Starfire pattern, with an embossed stellar design complimented with a luminous texture for tonal highlights, is available in seven solid tones in 12-gauge unsupported vinyl. The Luxor pattern, featuring a soft sheen and a color line conforming to researched consumer preferences, is offered in all vinyl and with an elastic fabric back. Manufacturer—*The Masland Duraleather Co.*

Reader Service Number 403

For sample swatches or other information circle appropriate number on Reader Service Card.

FABRILITE. Ardmore, Delphic and Cordero patterns are among recent introductions in this line of breathable type vinyl materials. Ardmore, a simulation of a hand loomed fabric with thousands of tiny openings through the material for breathability and seating comfort, comes in smart, new muted finishes in an elastic knitted fabric back construction. According to the manufacturer, Ardmore is keyed to today's demand for Colonial furniture, Danish modern, and a broad range of occasional chairs. Delphic features a contoured effect using a Jeweltone gold print in the valley of the non-directional design and is suggested for areas of heavy traffic. Cordero, which highlights the softness and look of a fine top grain leather, is available in twenty carefully selected colors. Manufacturer—*The DuPont Company.*

Reader Service Number 404

FEDERAN. Two new patterns recently introduced are Jigsaw and Deauville. Jigsaw, an unusually embossed fabric has been designed for commercial utilization. Both patterns are produced in supported material with a 27 ounce finish. The material is said to be durable, stain resistant and can be cleaned with a damp cloth. Colors that are available include nuget, juniper green, cobalt blue, rose-grey, honeysuckle and persimmon. The Federan line bears the quality certification of the United States Testing Co. and Parents' Magazine Consumer Service Bureau, Certificate of Commendation. Manufacturer—*Federal Industries.*

Reader Service Number 405

KOROSEAL. Pharoah, a lightly embossed pattern with a maze of irregular shapes which resemble hieroglyphics, is the newest offering in the Koroseal line. The pattern offers a texture of satin brocade, with a richness of new metallic colors of ancient Egypt including platinum, gold leaf, nectar, olive green, bronze brown, nile green, desert sand, jasper red, endive blue, alabaster white and bone black. The Linwood pattern features a traditional styling with a twig motif on a linen-like background in colors selected to enhance the silk sheen of the material. Both patterns are in medium weight with fabric backing. Manufacturer—*B. F. Goodrich Co.*

Reader Service Number 406

NAUGAHYDE-NAUGAWEAVE. Kenya, a new pattern in elastic Naugahyde, correlates multi-bands in different patterns of the same color with solid decorative colors, giving the appearance of a slubbed surface shantung. It comes in compatible colors, match-

Continued on page 43

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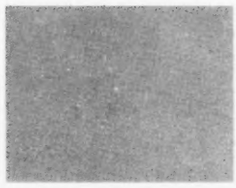
D-1729 Citron

D-1735 Sand

D-1707 Flame Red



D-1725 Light Green

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D-1554 Light Gray

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100 PATTERNS and WOOD GRAINS

101M Black

D-1710 Aqua

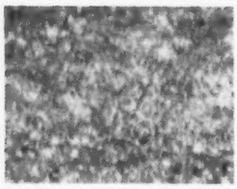
D-1732 Rust

D-1731 Dark Green

D-1740 Peach

D-1489 Charcoal

106 White



D-1059 Blonde Travertine Marble

7118 White Breccia Marble

6303 Pink Marble

506 Black & Rust Marble

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D-1837 Gray Flat Cut Walnut

498 American Walnut

D-2010 Windsor Mahogany

D-2003 Windsor Walnut

D-1714 Red Mahogany

D-1791 Tan Planked Maple

D-1792 Sliced Brown Walnut

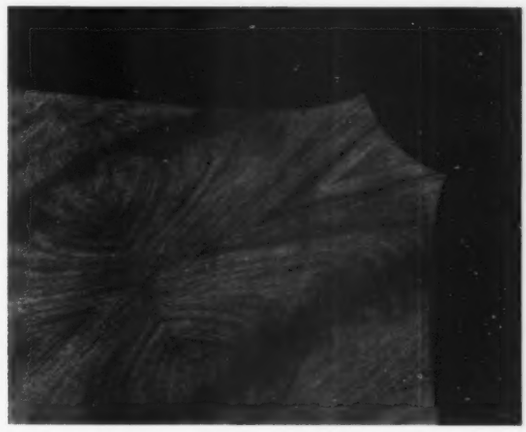
D-1742 Limed Oak

D-1782 Driftwood Walnut

D-1826 Teak

D-1209 Brown Walnut

D-1569 Butternut Maple



Castile Brown D-1990, Gray D-1989, Blonde D-1991
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D-2011 Pongee Walnut

D-1920 Rosewood

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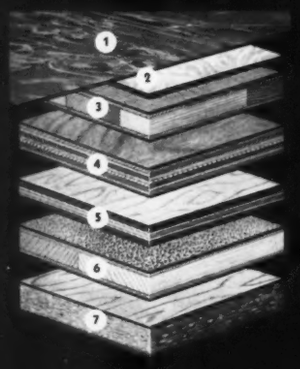

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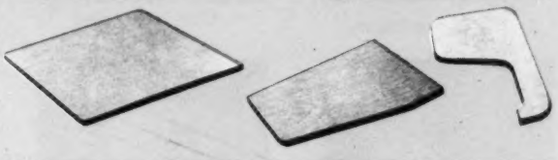

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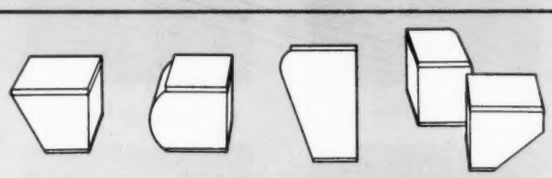

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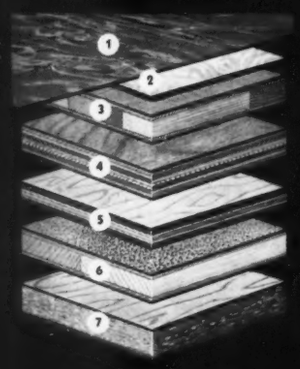

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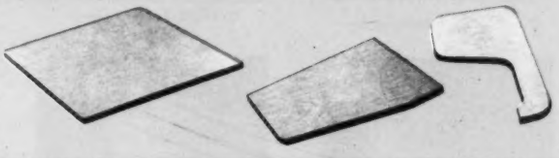

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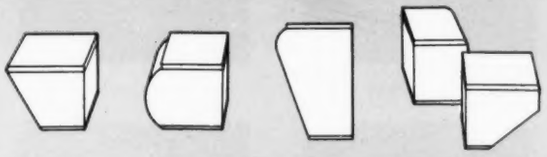

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FREE ADVISORY SERVICE

New In Vinyls

Continued from page 38

ing plain colors and with vignette striped colors. Naugahyde features a stretchable knitted backing, said to provide strength for trouble-free service. Newest offering in Naugaweave, which offers the texture of fabric with the durability of vinyl, is Criterion, featuring a soft look and a striking color range including melon, charcoal, brown, mocha, opal white, cocoa, gold, smoke grey, bisque, moss green and peacock blue. Manufacturer—*U. S. Rubber Co.*

Reader Service Number 407

PLYHIDE. Five new patterns in heavy, universal weight, colored and designed by Lawrence Peabody, are offered in complimentary and matching colors. Dimension, in a soft, clear finish, is available in thirty-four correlated colors, some claimed to be brand new in the vinyl industry. Filigree, a fabric-textured broken stripe pattern, is colored with Early American tones. Rex, a solid-colored boucle texture, is color-coordinated with Filigree, but can also be used alone. Forum and Forum Suede are coordinated to capture the appearance of finest suede. Manufacturer—*The Plymouth Rubber Co.*

Reader Service Number 408

VENTILAN. A breathable type fabric produced by an exclusive patent-pending process, Ventilan combines the practical advantages of vinyl with the comfort of ventilated, free-breathing upholstery. In the process, vinyl is applied by a continuous method, rather than by the conventional deposit method. An exclusive SR soil-resistant and slip finish is also applied to the vinyl. According to the manufacturer, the material is soft to the touch and slides easily for fine tailoring. It is currently offered in three patterns, Cordair, Zephyr and Airloom, in ten vibrant color combinations. Manufacturer—*The Landers Corp.*

Reader Service Number 409

WATASEAL-WATAHYDE. Patterns for the dinette trade include new Golden Sable, incorporating gold Mylar threads interlaced in arabesque fashion over a filigree panel stripe. The pattern has an oyster white or tan background, with an overprinting of cocoa or nutmeg. Pagoda, in Watahyde supported vinyl for the upholstery trade, has a thread-grained silk texture, with a luxurious iridescence. It renders an appearance of real silk and is produced in a wide range of colors. Magnifique, with a striking stria-like effect based on a silk gauze pattern and enhanced by a silk shantung slub embossing, is offered in both supported Watahyde and unsupported Wataseal. The pattern is said to be ideally suited for Danish modern settings. Manufacturer—*Harte & Co.*

Reader Service Number 410

IMPORTED VINYLS. A group of English vinyl manufacturers, The Plasticmakers of England, is extending its vinyl lines to American furniture manufacturers through the Strauss International Corporation. The line of imported materials, claimed to be the nearest thing to actual leather . . . on both sides, includes patterns of calfskin, polished pigskin, reptile grains with calculated irregularities and elegant Florentine designs which

Continued on page 72

THRIFT LEGS
by Victor
with Satin Brass Brushed Ferrules
at 4¢ Less Per Leg!

Hoot Mon! The same fine quality

YOU SAVE 4¢ PER LEG!

BEAUTIFUL HARDWOODS
FURNITURE FINISHED
5/16" HANGER BOLT and 1 1/2"
FERRULE ATTACHED
1 7/8" TOP DIAMETER
3/4" BOTTOM DIAMETER

OUR FORMER ADVERTISED PRICE LIST:

	4"	5"	6"	7"	8"	9"	10"	11"	12"
1000 or more	.28	.30	.32	.34	.36	.38	.40	.42	.44
100 - 1000	.30	.32	.34	.36	.38	.40	.42	.44	.46

BLONDE — EBONY — WALNUT — MAHOGANY FINISHES

YOUR NEW MONEY SAVING PRICE LIST

	4"	5"	6"	7"	8"	9"	10"	11"	12"
1000 or more	.24	.26	.28	.30	.32	.34	.36	.38	.40
100 - 1000	.26	.28	.30	.32	.34	.36	.38	.40	.42

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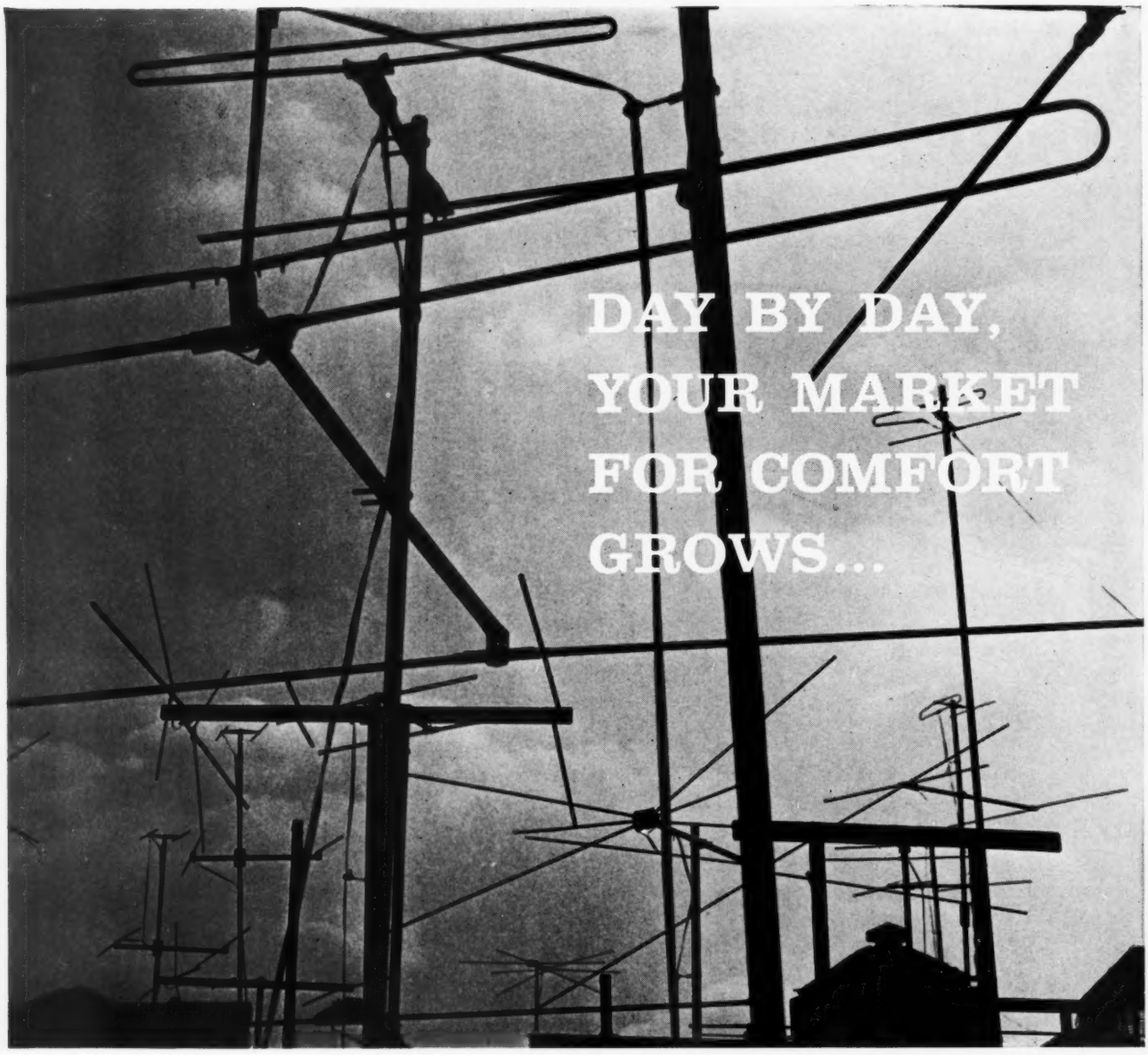

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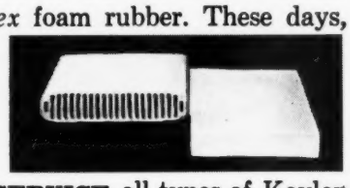
U.S. KOYLON® *Latex* FOAM

GENUINE LATEX FOAM RUBBER FOR THE FINEST IN CUSHIONING

Furniture buyers know the Koylon label means quality. More than 20 years of customer satisfaction... easy sales and no returns... prove the superior performance of Koylon *latex* foam rubber. These days, more than ever, customers are willing to pay for quality. They know – and ask for – nationaliy advertised Koylon Foam by name. Let Koylon be the "plus" factor that helps you "trade up" your furniture to sell in today's comfort-conscious market. Put years and years of satisfactory service to millions to work for you! **FOR FASTEST SERVICE** all types of Koylon Latex Foam–luxurious molded cushions, flat stock and economical new Pin Core Foam (flat or crowned) – are made in 3 convenient locations: In the East–Woonsocket, R. I.; in the Midwest–Mishawaka, Ind.; in the Far West–Santa Ana, Calif. And to make your quality coverage complete, count on the winning combination of Koylon Foam with chemically compatible U.S. Naugahyde® or U.S. Naugaweave® upholstery!



U.S. Koylon FOAM® The Finest in Cushioning

United States Rubber

Coated Fabrics and Koylon Seating Dept., Mishawaka, Ind.

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Marketing Idea

Promotes Office Furniture With Traveling Display

A completely furnished and decorated office in an architectural setting that can be knocked down for shipping, will help sell furniture for Jens Risom Design, Inc. and its dealers. A similar unit unveiled a year ago proved successful.

First shown at the National Office Furniture Association convention-exhibit at Atlantic City, the display will be offered on loan to Risom dealers for local trade shows, open house events, or window displays. The structure and interior of the exhibit were designed by Becker & Becker Associates, New York.

The structure of the exhibit echoes the look of today's architecture. Made of upright and crossbeam aluminum members two feet apart, it gives the feeling of looking into a modern building from the outside. A unique feature of the exhibit is that the front of the space is closed on the aisle side with the architectural members, thereby encouraging visitors to walk through the interior and closely examine the furnishings.

The colorful office setting is planned for the hypothetical publisher of a sports car magazine and spotlights

Continued on page 72

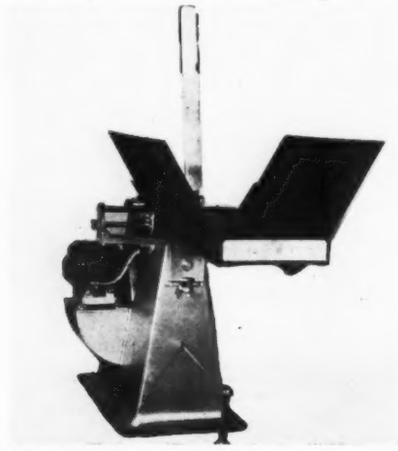
RISOM EXHIBIT, shown in three views, gives feeling of looking into office interior from outside of a modern building.

FDM

UPHOLSTERY TECH
LEONARD S. SIMON

CUTAWAY shows inner working of Model D-16 cushion filler supplied by Anderson Machine & Tool Works, Inc.

POPULAR MODEL 40 x 36 cushion filler offered by Lochner Manufacturing Co.



MODERNIZED CHANGES improve efficiency of this latest model cushion filler by Optenberg Iron Works.

CONVEYOR SPOUT is unique feature of this cushion and crib mattress filler by United Mattress Machinery Co.

Cushion Filling Machines

According to our observations, most cushion construction problems are being solved due to improved materials, methods and equipment. As in other areas of furniture manufacturing, modern power equipment deserves a well-earned plaudit for its contribution towards the betterment of cushion making. Here, specially designed cushion filling machines turn out improved cushions with high-speed efficiency.

If you are using the latest and best cushioning materials and are still getting cushion complaints, take a look at your cushion making equipment. Is it up-to-date? Is it the best type of machine for your purpose?

Among the leading builders of cushion filling machines is Lochner Manufacturing Co., Fort Wayne, Ind. The extensive Lochner line offers cushion fillers for each production facility, ranging from the smaller custom and re-upholstering shops to the high-speed large-production plants. In the Lochner line are six "Electramatic" cushion fillers, five models and sizes of manual cushion fillers, and a modern version of the old belly-pushing hand tins, now designated by Lochner as the "Economy Hand Filler." And although this hand filler may be considered to be passé, it still meets the needs of some smaller shops and training centers, says Lochner.

What are the reasons behind the need for eleven separate sizes and models of Manual and Electramatic cushion fillers?

Says Ellis P. Lochner, "One of our problems has been to keep up with the trend in cushion sizes. With most cushion makers seeming to prefer to back-fill all of the wider cushion styles, we have added the 40x36 and 48x36 double-telescoping models to our line. These enable the user to handle most of the wide cushions while retaining capacity for the small ones on the same filler."

Mr. Lochner recommends a machine of the "long type" as being most suitable to today's needs, where end-filling is acceptable to the user. There is a particular advantage in filling a wide cushion from the end, he points out, because it is much easier and faster to close a seam of approximately 20 inches in length as compared to seams of 32 inches, 40 inches or more. And a 26 x 48, 28 x 54, or 30 x 60 filler, in Mr. Lochner's opinion, can handle virtually all of the spring-filled cushion sizes currently in vogue.

Capacity of Lochner's Electramatic cushion filler is limited only by the speed at which materials are prepared for the filling operation, and a schedule of 200 cushions per day can be readily managed with an efficient set-up.

Control of the Electramatic is accomplished electrically, and it has an automatically controlled limit of rack travel. With its gearmotor-type motor, all gearing is in constant mesh; there are no clutches to engage or disengage, and there are no gears to shift. Additionally, the forward circuit includes a foot switch to control the work stroke while handling the cushion as it ejects.

Some of the most prominent names in the upholstered furniture and bedding manufacturing industries are listed as customers of the Anderson Machine and Tool Works, Inc., Chaska, Minn., makers of the "Anderson Hydra-Speed" line of mattress and cushion filling machines. Construction of the Anderson Hydra-Speed machines is impressive.

According to company spokesman Richard A. Fisher, the power unit of Hydra-Speed is a modern concept of hydraulics which has been successfully adapted for use in the machine. The mechanism, says Mr. Fisher, is powerful, yet simple. Each filling machine contains a self-contained power system consisting of a ball-bearing motor and hydraulic pump

Continued on page 68

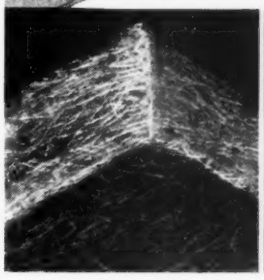
cut out all waste with

Burton-Dixie PACKAGED PADDING

. . . made exactly to your specifications

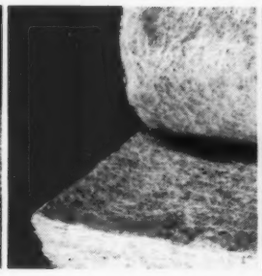
combines sewed padding securely stitched to a burlap skirt.

- **Eliminates two complete operations in your factory**
- **Cuts out all waste of insulator, padding and burlap because Burton-Dixie's sewed padding is made exactly to your specifications**
- **Speeds up your production and assures a uniform finished product**
- **Available in any size or shape**
- **Reduces your inventory to one item only instead of three**



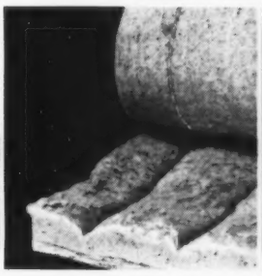
SI-LATEX . . . a combination of interstitched sisal and pure latex, vulcanized together to make an extra strong spring insulator.

- **Laboratory proved to outwear ordinary spring insulators 2 to 1**
- **Eliminates all spring feel . . . cannot cup or hollow out**
- **Available cut to any size or shape . . . plain or stitched to cotton felt**



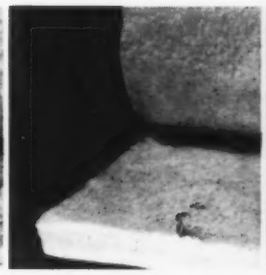
SISAL The finest quality you can buy . . . consisting of only the toughest, whitest sisal fibers available.

- **Cut to any size or shape**
- **Also available in rolls of any width**
- **Loose punch for a soft pad . . . or tight punch for a firmer pad**
- **Loom pad also available for a much firmer pad**



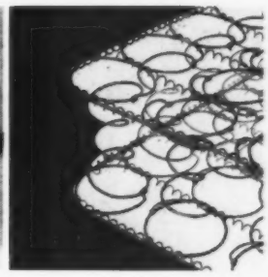
SEWED PADDING Spring insulator and fine quality cotton padding sewed together to save you labor and assure uniformity. For use on all spring constructions.

- **Si-Latex – Cotton. Burton-Dixie's exclusive Si-Latex insulator and cotton padding**
- **Sirex – Ordinary sisal insulator and cotton padding**



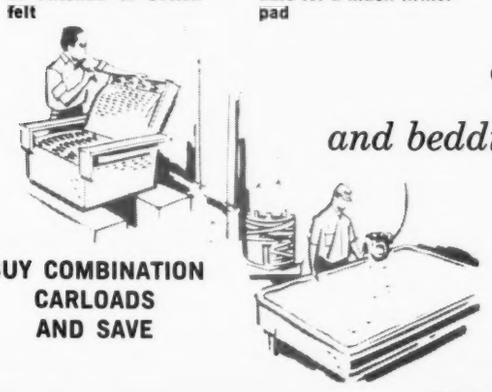
COTTON FELT The finest quality cotton only . . . consisting of high grade staple cotton and linters.

- **Made of 100% all new material**
- **Furnished to any thickness and widths**
- **Cut to any sizes or shapes**



MATTRESS INNERSPRINGS AND CUSHION SPRINGS The finest innerspring units made . . . available in standard and special sizes.

- **Accepted by nationally known bedding manufacturers for more than 60 years**
- **All standard coil counts available**
- **Any gauge wire you prefer**



BUY COMBINATION CARLOADS AND SAVE

one dependable source for your upholstering and bedding needs for over 60 years

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Continued from page 12

WIDE BELT SANDING was discussed at the NASFM convention by Gordon L. Schuster, president of Timesavers, Inc.

belt sanders are now available for small run jobs and any application formerly considered the province of stroke and drum sanders, he said. They can save from 40 to 70% of labor costs and give a more uniform finish than stroke sanders, he added, and they can provide better finishes, faster feed speeds and lower abrasive costs than drum sanders. "Besides, it's a more flexible machine," he asserted. "The belt can be changed in two or three minutes, and with the growing use of this machine, belts will be available in a greater variety of grits."

The machines themselves are due for important developments, according to Schuster. "At present, finishing both surfaces requires top and bottom sanding models operated in tandem. However, there are models on the drawing boards that will do both jobs in one pass. Eventually it will be possible to go from rough to polish in one pass, with multiple belts.—And all this at a feed speed of 100 feet per minute!"

Schuster sees the past development of particle and flake board as a natural prospect for further advances with the aid of wide belt equipment.

"The wide belt sander may eliminate crossbanding in veneer, too," Schuster predicted. "It will give a flatter surface, with no telegraphing through."—*David LePage.*

HDMA Holds Annual Meeting

NEITHER UN-SOUTHERLY snow nor sleet could stay delegates from making their best showing in history, at the 31st annual meeting of the Hardwood Dimension Manufacturers Association, held March 2-4 in New Orleans.

New officers elected were: W. Hays Stanley, Hillyer Deutsch Edwards, Inc., president; Charles T. Rhyne, Rhyne Lumber Co., vice president; and J. Edgar Kennedy, HDMA, managing director. Carlton Smith, Carlton Smith Industries, Inc., will assume the title of "Past President."

NEW OFFICERS of the Hardwood Dimension Manufacturers Association are, left to right, J. Edgar Kennedy, managing director; Carlton Smith, past president; W. Hays Stanley, president; and Charles T. Rhyne, vice president.

A "Wood Adhesives Clinic" was moderated by C. D. Dosker, Gamble Brothers, Inc., Louisville, Kentucky.

Dr. Richard Blomquist, Forest Products Laboratory, Madison, Wisconsin, spoke on various aspects of gluing; Robert C. Gill, Peter Cooper Corporations, Gowanda, N. Y., covered "Hide Glues in Hardwood Dimension Stock," and L. E. Clark, Perkins Glue Co., Lansdale, Penna., discussed "Radio Frequency Gluing."

KROEHLER MANUFACTURING CO. has named *Conley C. Stewart,* former vice president of Johnson and Johnson, to its executive staff as production equipment engineer. He replaced *Torbin F. Yates,* who left the furniture industry March 1 to become executive vice president of Springfield College, Springfield, Massachusetts. The two men worked closely together in the production development of Kroehler's new basic furniture making material, Cultured Wood.

YATES

STEWART

AARONSON

SEALY, INC. has appointed *Sam Aaronson* to the newly created post of materials and development coordinator; his duties include responsibility for placing orders for materials for the member plants as arranged by the national office. Aaronson has been with the firm since 1958 on quantity material selection and screening.

FURNITURE ALUMNI of North Carolina State College, Raleigh, adopted a constitution and by-laws at the first meeting of the *North Carolina State Furniture Alumni Association. Edward A. Shook* was elected president of the new organization, *Bradley Pennell,* vice president, *Bernie Beane,* secretary-treasurer, and *Basil Turbyfill,* correspondence secretary-newsletter editor.

A drive for additional charter members is under way, and the next meeting has been set for August 26 and 27 at Blowing Rock, North Carolina, when the Cost & Production Division of the Southern Furniture Manufacturers Association re-convenes.

Those eligible for membership in the Alumni Association are: 1) all graduates of the Furniture Manufacturing and Management course at North Carolina State College; 2) graduates of the college now employed in the furniture and woodworking industry; 3) those who were enrolled at the college who didn't graduate but are employed in the furniture and woodworking industry, and 4) students presently enrolled in the furniture curriculum.

DELEGATES to the Sixth Annual NAFM Supply, Equipment and Fabric Fair, August 27-30 at Chicago's Conrad-Hilton can expect a greatly expanded display of European and American woodworking and upholstery machinery, according to John M. Snow, NAFM executive vice president. New European exhibits were developed as a result of a foreign tour by some 30 NAFM members last September.

Forty-four domestic suppliers of machinery, equipment, components, and services were signed for display space according to a recent tally, and Snow said he expects the total to exceed that at any previous NAFM fair.

The 1960 Fair will be held concurrently with the 32nd Annual NAFM Convention, which for the second consecutive year will feature cost and production sessions geared to the needs of plant executives. There will also be special meetings for top management.

SIESTA FURNITURE MFG. CO. will build its sixth unit, at Shannon, Miss., according to *Van Riley*, head of the firm. Siesta now has two plants at Shannon, one each in Nettleton and Bruce, and will soon begin operations at Houlka.

LEGGETT & PLATT, INC., Carthage, Mo., has elected *Harry Mack Cornell, Jr.*, president; *H. M. Cornell, Sr.*, to the newly created post of chairman of the board, and *Mrs.*

KELLER, SR.

KELLER, JR.

Cornell, Sr., became the first woman to take a post on the board since the firm was organized in 1883. The new president was formerly vice president in charge of the Ennis, Texas, plant.

DREXEL FURNITURE COMPANY has appointed *Richard L. DeBell* to the new position of General Sales Manager. He will report directly to *Joseph E. Huffman*, vice president and director of sales, and will have direct responsibility for the administration of Drexel's sales policies and personnel.

HERITAGE COMPANY'S upholstery plant in High Point, North Carolina, has named *Vance Clontz* assistant general superintendent. He was superintendent of the Mocksville plant for the last year and a half.

KENDALL SCHOOL OF DESIGN, Grand Rapids, Mich., has appointed *Harley Wagner* assistant instructor. A graduate of Kendall, the only school offering exclusive courses in furniture design, Wagner is a partner in Jackson, Jackson & Wagner, communications consultants.

FINISHING SEMINAR planned by the *Wood Office Furniture Institute* will be held May 12-14 at North Carolina State College, Raleigh. The Institute's second annual production seminar is designed for plant managers, superintendents, engineers and finishing department foremen. The college staff will present principles of good finishing techniques, and experts on finishing materials and trouble shooting will also appear. A majority of the sessions will be practical lab applications.

BASSETT FURNITURE INDUSTRIES, INC., will build a $1,491,000 office structure at Bassett, Virginia to house all six units of the company, including personnel in purchasing,

Continued on page 50

Band Sawn Adirondack Hardwoods

We are ready, willing and able to supply the furniture industry with fine Hardwoods manufactured on our own two band mills which annually produce over fifteen million feet of *Yellow Birch, Hard Maple, Beech* and *Cherry*. We dry in our own modern kilns a million feet of lumber every month.

MOULDING-DIMENSION

Our new Moulding—Dimension plant is equipped with the best and latest machinery including "Taylor Panel-Flo" and "Raybond" Electronic Gluers enabling us to produce both loose and glued up furniture dimension made from our own band sawn kiln dried lumber.

We invite your inquiry—write, wire or phone:

NORTHERN LUMBER CO., INC.

General and Sales Office
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Saw mill and dry kilns—Poland and Riparius, New York
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Members—National Hardwood Lumber Association
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CURVED PLYWOOD?

Made to specification

High-Frequency bonding on low cost forms

Tell us your problem — we'll solve it to your specifications. We manufacture unusual plywood shapes for applications ranging from church pews to water skis . . . table legs to torpedo cradles. Our high-frequency presses mass-produce curved parts fast and at lower cost than other methods, and with greater stability. We have over 200 stock dies available for stock shapes. Write, wire or phone RI 2-2474 for quotations and complete engineering service.

PLY-CURVES INC.

1615 Monroe Avenue, N.W., Grand Rapids 5, Michigan

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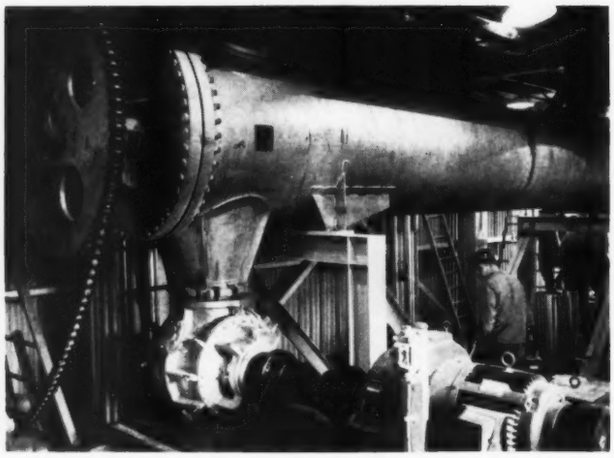
Continued from page 49

sales, financial, and executive offices. Design studio, showrooms, and an employee cafeteria are incorporated in the floor plan.

BAKER FURNITURE, INC., Grand Rapids and Holland, Michigan, has acquired the controlling stock of the *Stembridge Manufacturing Company*, Chicago, manufacturer of metal furniture and parts. Stembridge has been a Baker supplier for several years. Baker officials said the move will aid the production of a new major group of fine executive office furniture which combines cabinet woods and stainless steel. Designed in conjunction with Skidmore, Owings and Merrill, an architectural firm, it is intended for such projects as the Upjohn Chemical Company office building nearing completion.

Supplier Service & Personnel Changes

Bowater Board Plant To Open



STAINLESS STEEL cooker at the new Catawba, S. C., plant of Bowater Board Co. steams gum, oak and poplar chips for production of smooth-on-both-sides hardboard.

Production of smooth-on-both-sides hardboard at the new $7,000,000 plant of Bowater Board Company, Catawba, South Carolina, is scheduled to get under way early in June, according to John G. Robinson, mill manager. He said the plant will be the first hardboard mill in the eastern part of the country, and represents the largest investment for a dry process hardboard plant in the world.

The plant was designed to produce 160,000,000 square feet of hardboard a year, Robinson stated, with initial production allocated for the furniture industry. "The Catawba location is convenient to the nation's major furniture producing area in the Carolinas," he said. "Hardboard is becoming increasingly important to the furniture industry, with market surveys indicating a big jump in the rate of consumption in the next five years."

Bowater Board will be manufactured by a relatively new air—or dry—process, which produces a smooth surface on both sides and other qualities its makers expect to attract the furniture industry in particular. It was developed in a pilot plant at Coos Bay, Oregon.

"The air process of manufacturing hardboard utilizes high velocity air, to blow the chips and wood fiber ingredients," Robinson continued. "Most manufacturers use water. The air process allows for a better fiber formation. An unfinished board made by this process has a pleasing, warm wood color and smooth surfaces that provide superior finishing characteristics."

When used as a core material, the manager added, Bowater Board will meet detailed specifications for high internal bonds set up by furniture manufacturers. Further, the material can be made both thinner and thicker than hardboard produced by the wet process, he said, and thus can be tailor-made to meet critical end uses in the field. "We modify the density by altering the time pressure cycle," he explained; "that gives us a wood panel product with physical properties not available in natural woods."

The Catawba mill will boast the fastest production cycle of any hardboard plant in the world; its proposed annual output of 160 million square feet, on a standard ⅛-inch basis, will mean a daily production of 500,000 square feet, utilizing 1,000 cords of wood a week.

The plant will have 125 employees, with an estimated payroll of $500,000 during the opening stages of operation.

A member of the Bowater Organization in North America, the Catawba plant is situated next to the Bowater Carolina Corporation pulp mill on the Catawba river. The plant is served by both the Southern and Seaboard railroads and has access to the heavily-forested Piedmont areas of North and South Carolina.

J. R. HAHN **JOHN G. ROBINSON**

The new mill will require only hardwood pulpwood—oak, gum and poplar, thus creating an important new market for hardwoods abundant in the South.

Manufacture of dry-processed hardboard marks Bowater's first step toward diversification in North America. The Bowater Organization has produced both hardboard and insulation board for the past 30 years at plants in Athy-County Kildare, Ireland, and Kemsley, England, and is recognized as one of the large producers of hardboard in England. ■

FOOD MACHINERY AND CHEMICAL CORP. has named *Dr. Leo S. Burnett* technical director of its Dapon department. FMC's Dapon resin is used in the molding of plastic laminates under the name of Daponite.

THE CROSSETT LUMBER COMPANY, a division of The Crossett Company, will build a $6 million plant to produce medium density woodshavings board. It will turn out 100 tons of board daily by the Behr process, from gum wood. The Crossett facility will reportedly be the second of its kind in the United States. The first plant erected to utilize the Behr process was completed two years ago by *Roddis Ply-*

wood Corporation, which holds exclusive U.S. rights to the process. The Crossett plant will operate under a license from Roddis.

DAYTON RUBBER CO. has changed its corporate name to The Dayco Corporation. The reelection of three members of the board of directors was also unanimously approved. They are *C. M. Christie*, president; *H. H. Kahn* and *B. G. McCloud Jr.* The company recently appointed *Wesley Dunlap* branch manager of its High Point office. Dayco will move urethane foam cushioning production from Marietta, Ohio, to Waynesville, North Carolina. Plans call for location of other urethane plants in key market areas.

DEWALT DIVISION, American Machine and Foundry Company, has appointed *A. E. Richardson Jr.* general sales manager succeeding *Truman Jones*, recently elected vice president in charge of special projects. Richardson will assume responsibility for all home office and field sales activity, in the United States and Canada.

KELLER MANUFACTURING COMPANY, Corydon, Indiana, has promoted *Jack Walts* from sales promotion manager to sales manager. He has been with Keller for the past five years in sales and administrative positions.

RICHARDSON

EVANS

WALTS

COLUMBUS COATED FABRICS CORP., Columbus, Ohio, has appointed *James E. Evans*, director of sales, succeeding *Jameson Crane*, resigned. Evans joined the vinyl fabrics, firm in 1953, and served as assistant director of sales, upholstery fabrics division, since 1958.

HEWITT-ROBINS, INC., Stamford, Conn., has appointed *Pitt B. Harris* general manager of the foam products division. He will be headquartered at the firm's urethane foam plant in Franklin, N. J. and will be responsible for production, sales, product development and other phases of the company's synthetic foam products operation.

PINKERTON CORPORATION, Memphis, Tenn., has opened a new kiln drying, surfacing and resawing facility adjoining the Illinois Central terminal. Its unique materials handling system incorporates 200 special kiln trucks, operated in conjunction with a railroad turntable. All unloading, stacking and reloading is done under cover. Total kiln capacity will eventually be 600,000 feet, and is now half completed. One large building enables the firm to store 2½ million feet of lumber under shed. Yard storage capacity is 6 to 8 million feet. The complete operation is on track, offering minimum handling, according to *Max Pinkerton*, president.

MOBAY CHEMICAL COMPANY has moved its administrative, sales, and engineering headquarters to the firm's new general office building on the Penn-Lincoln Parkway West,

Continued on page 52

HARDWOOD FURNITURE PARTS and MOLDINGS
ASH·OAK MAPLE POPLAR WALNUT
Specializing in OAK DRAWER SIDES
HARCO
WILLIAMS-BROWNELL Inc.
ASHEVILLE, NORTH CAROLINA
EST. 1905
P. O. Box 1091 — ALpine 2-5341
FOR DATA CIRCLE FDM NO. 1085

LOOK WHAT AUTOMATION HAS DONE TO THE PRICES OF VICTOR
SLENDERIZED LEGS!
Victor leads in value with new low prices. These prices have been made possible by automation and modern manufacturing methods without sacrificing quality. We call it "operation money-saver" and you reap the benefits.

1 ¾ TD, ⅝ BD							
Length	6"	7"	8"	9"	10"	12"	14"	16"
1000 or more	.32 ea.	.34 ea.	.36 ea.	.38 ea.	.40 ea.	.44 ea.	.48 ea.	.52 ea.
100 to 1000	.34 ea.	.36 ea.	.38 ea.	.40 ea.	.42 ea.	.46 ea.	.50 ea.	.54 ea.

Kiln dried hardwoods, finished in choice of Blonde, Ebony, Walnut or Mahogany.
Attach with our patented Clinch Nut Plates.
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#20 tri. flat 6¢ ea. #10 tri. 10° 6¢ ea.
#15 tri. 15° 6¢ ea.
Victor WOOD PRODUCTS CO.
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FOR DATA CIRCLE FDM NO. 1080

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- MID-WEST: Art Sanke, v.p., 666 Lake Shore Dr., Chicago, Ill.
- WESTERN: Dick Dietrich Assoc., L. A., San Fran. and N. W.
- MICH.-IND. J. Foley, 1712 Rosewood Ave., S. E., Grand Rapids, Mich.

FOR DATA CIRCLE FDM NO. 1082

Continued from page 51

about eight miles from downtown Pittsburgh. The firm manufactures chemicals used for all forms of urethane foam, elastomers, industrial coatings and paints, and adhesives and sealants.

CATALIN CORPORATION OF AMERICA has appointed *Joseph Sykes* and *John Rasberry* salesmen in its Thomasville divisional office. Sykes, who will be concerned primarily with the sale of Catalin textile resins in North and South Carolina, was previously employed by a dyestuff manufacturer. Rasberry will sell Catalin adhesives in the same area. He was formerly connected with a pharmaceutical firm.

HARDWOODS EXHIBIT, INC., elected *Robert E. Hollowell, Jr.*, president at a recent meeting of the board of directors. He is vice president of Pierson-Hollowell Co., Indianapolis, Ind., and vice president of the Fine Hardwoods Assn. Other officers elected were: *W. W. Gamble*, Yawkey-Bissell Hardwood Flooring Co., White Lake, Wis., vice president; *Franklin Griffin*, Franklin Griffin Co., Chicago, secretary; and *George F. Wilhelm*, R. S. Bacon Veneer Co., Chicago, treasurer.

Edward A. Heidt, president of *Penrod, Jurden and Clark Co.*, Norfolk, Va., and *Penrod Industries*, was elected president and chairman of the executive committee.

The Hardwoods Exhibit is a permanent $500,000 display in the Museum of Science and Industry, Chicago, supported by the hardwoods industry.

HEIDT

HOLLOWELL

HATTON

THE SENG COMPANY has appointed *William J. "Bill" Hatton* western sales manager, with headquarters at 2313 East 51st Street, Los Angeles. He succeeds *Richard A. "Dick" Dawson*, who resigned March 1 to join the sales staff of Capitol Bedding Co., Indianapolis, Indiana.

HARDWOOD PLYWOOD INSTITUTE named *Carl D. Wheeler* president at its 19th Annual Spring Meeting March 2-4 in New York. The new vice president is *Robert J. Weber*. *Clark E. McDonald* was reelected managing director.

A panel discussion, "What's What in Adhesives," was moderated by *Cliff Jones*, of Bradley Plywood Corp., and included *A. B. Klinetob*, Perkins Glue Co.; *T. D. Johnson*, Reichhold Chemicals, Inc.; *R. J. Bandikow*, The Borden Co.; *A. R. Johnson*, Arthur D. Little, Inc.; and *J. B. Hyman*, Catalin Corp. of America.

Other speakers included *Harold J. Holdsworth*, International Panel Boards, Ltd.; *Andrew S. Place*, Place & Co., Inc., and *Jack Ramsey*, Darlington Veneer Co. Ramsey moderated a panel on "Technological Changes in Plywood Machinery," which included *W. T. Bramett*, G. M. Diehl Machine Works, Inc.; *Ken White*, Greenlee Brothers & Co.; and *C. T. Simpson*, the Union Tool Co.

MASSACHUSETTS MOHAIR PLUSH CO. has announced four new appointments. *Thomas A. Roberts*, who has been general manager of the *Ellenboro Mills* division, was named vice president in charge of the Ellenboro Mill. *William Laine*, former sales manager of upholstery, will be the vice president in charge of upholstery sales. *James W. Milam* went from sales manager to vice president in charge of decorative fabric sales for the *Neisler Mills* division in Kings Mountain. *Jack Arnette* was promoted to purchasing agent of the Kings Mountain plant.

KAY MFG. CORP., Brooklyn, New York, has opened a new plant at 750 Frelinghuysen Ave., Newark, N. J. to supply springs and spring assemblies to the furniture and bedding industry in the northeastern U. S.

FALLS ENGINEERING AND MACHINE CO., Cuyahoga Falls, Ohio, has appointed *David Wright*, vice president and sales manager, and *Paul A. Frampton*, sales and service engineer.

NATIONAL LOCK CO., Rockford, Ill., has opened a new and larger warehouse at 1926 W. Green St., High Point, N. C.

JACK SUPPLE COMPANY will be the name of a new West Coast fabric business. *Jack Supple* resigned his position as vice president and sales executive of *Caro & Upright, Inc.*, to go into business for himself. A life-long career in the western fabric and textile industry preceded the decision. His firm, located at 4154 Santa Monica Boulevard, Los Angeles, will be exclusive distributors in most areas of the West for Tilbury Fabrics, Inc.; Portage Draperies Co., Inc.; Grosby Products, and William Whitaker Company.

AMERICAN WOOD WORKING COMPANY has completed a new automatic wood turning plant at Montello, Wisconsin. The one-level air-conditioned and dust-proof building covers 40,000 square feet. It is said to be designed to produce, under rigid quality control, with speed and efficiency, wood parts ranging from spools, handles, wedges and

"Fred, just got another complaint on that last batch of material."

wheels to knobs, dowels, blocks, and moldings—all available in plain, dipped, sprayed or tumbled finishes. Truck and rail shipments will be made daily, the firm reports, from unconfined dock facilities.

Customer Expansions & Personnel Changes

KAY FURNITURE CO., has opened a new store at Eighth and Main Sts., Cincinnati, Ohio. The six-story building was completely remodeled into display floors for furniture, appliances, floor coverings, bedding, radios and TV.

HESS'S DEPARTMENT STORE, Allentown, Pa., has appointed *Irving S. Jalkut* furniture mechandiser in the home furnishings division. Jalkut was formerly a member of the executive merchandising council of *Kroehler Manufacturing Co.*

LEACH HOME FURNISHINGS CO. is the name of a new furniture store at 315 Third NW, Albuquerque, New Mexico. *B. E. Leach,* founder and former president of *Bargaintown Stores,* acquired a lease on the 17,000-square-foot building, after disposing of his interest in the Bargaintown chain to the Usher and Lebowitz families.

DANISH FURNITURE SHOW will be held May 7-10 at Copenhagen. Furniture of Danish design, lighting and art displays will be featured.

SUNIHOME FURNITURE CO., Houston, Texas, will build a new structure on Dowling between Gray and Webster, across from the present store. *Hertzel Aron* is president.

FRIEDMAN FURNITURE COMPANY, Cincinnati, Ohio, has four major moves underway. A large furniture store will be completed in the Tri-County Shopping Center, Kemper and Princeton Rds., by late summer or early fall. An extensive redecorating project is in process at their present location, and they're closing operations at their Sixth Street store in downtown Cincinnati. Finally, the company is occupying 30,000 square feet of additional storage in a building at Spring Grove Ave. and Vine St.

GOLDSTEIN FURNITURE COMPANY, Sharon, Pennsylvania, recently opened its new $200,000 store, at 37 North Water Ave. Designed to weather high waters common to the area, the store has 12,000 square feet of selling space, all on one floor.

BEVAN FURNITURE STORE, West Nanticoke, Pa., has purchased *Domestic Sales and Service,* a large furniture store with 10,000 square feet of floor space. *Cyril Bevan* announced he will keep the existing personnel, and add *Bernard Mont* to the staff. Leading lines of furniture and appliances will be continued.

HOME FURNITURE, INC., Alexander City, Alabama, has been purchased by *Austin Holley* and *Ralph Gandy* from *W. L. Huggins,* former president-manager. Both veterans of the furniture business in Alexander City, the new owners said the store would retain its present name and policies.

HAVERTY FURNITURE COMPANY, Anniston, Alabama, promoted *Andrew Loui,* former credit manager, to assistant manager of the local store. ■

Facing Facts

VICTOR A. LENNON, partner, Lennon-Rose & Co., management consultants, Chicago is author of this regular feature.

Executing

It seems that everybody envies the "Boss," except the boss himself. While the role of chief executive ranks high in compensation, it also ranks high in loneliness, time demands and responsibility.

For example, although the work week of the average worker is now less than 40 hours, the work week for the average executive now averages 54 hours, and for the *chief* executive the average is even higher.

Unquestionably, tremendous demands on the time, talent, resourcefulness, and patience of the "Boss" are continuously being made. Frequently, he also has occasion to secretly question his own abilities. At times, he may even wonder if he has the proper qualifications for the job. In this latter regard, it is interesting to note that while researchers have exhaustively tried, they have not been able to come up with a set pattern of qualifications for the chief executive. Their studies have shown that among the successful executives are those who come from poor families as well as wealthy families; outstanding colleges, mediocre colleges and no colleges (in fact, it is probably safe to assume that the majority of the heads of small and medium size businesses probably never attended college). Among these success stories are introverts as well as extroverts; those of small physical stature as well as large physical stature.

It seems obvious then, that anybody can be an executive. While the business of "executiving" is a difficult one, it seems to come much easier for some than for others. Volumes have been written on leadership, the art of being a good executive, and the like. Much of these writings have been directed at those who aspire to the role of executive.

For those who already have arrived, all other factors being equal, I believe that there are three achievable attributes which can materially ease the burden of the harrassed executive. These are:

Self-confidence
An honest recognition of personal limitations
Effective delegation

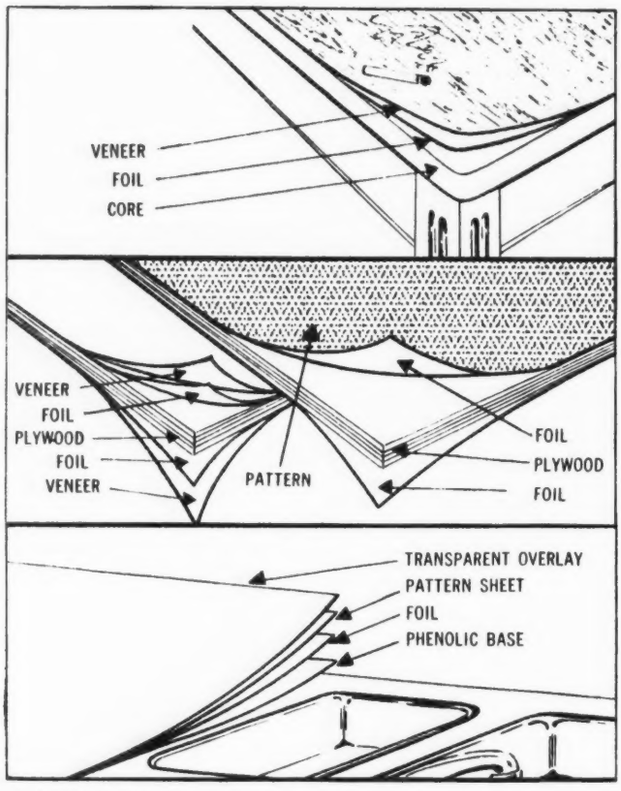
While delegation is becoming a hackneyed, shopworn word, it appears that many executives find it difficult to achieve *effective* delegation. For example, how often have you heard it said, "I have to do this myself" or "I cannot trust anyone to do this

Continued on page 71

- **Materials**
- **Equipment**
- **Supplies**
- **Components**
- **Literature**

FDM IT'S NEW

For more information on items listed in the IT'S NEW Columns use the handy Reader Service Card opposite pages 22 and 58. Complete details on these items will be sent to you by the manufacturer.



ELIMINATES BURNS when used under veneers or plastic laminate, new adhesive coated foil has many furniture uses. Data and sketches courtesy Aluminum Company of America.

Adhesive Coated Foil Disperses Heat

A new aluminum foil, coated with an adhesive which bonds it permanently to veneers, plastic laminates, wood and other materials, has become commercially available from the Aluminum Company of America. One of the most important uses for the new product will be to protect furniture veneers from cigarette burns.

The new foil development became possible when Polymer Industries, Inc., Springdale, Conn., created "Dri-Line," a new type of adhesive coating which anchors extremely well to any aluminum surface. The coating chemically reacts with woods to form almost perfect bonds.

The "Dri-Line" adhesive coating will not adhere to any other substance or itself, except under certain conditions of pressure, heat, time, and moisture. Therefore, aluminum foil coated with the material can be shipped, handled and stored indefinitely.

When bonded to wood or plastic, the foil serves as a moisture barrier as well as a disperser of heat.

The Fine Hardwoods Association recently approved Alcoa's foil for use under face veneers of furniture panels for its "Finishield" process.

The underlying layer of foil, approximately .0025 inches thick, dissipates heat away from a lighted cigarette fast enough to prevent scorching of the wood fibers and damage to the surface finish.

The foil may also be applied to both sides of plywood for use as a paint base. It also meets the National Electrical Manufacturers Standard LP2-1957, for cigarette-proof-type plastic laminates.

According to Alcoa, the new coated foil can be successfully bonded to hardwood or softwood lumber and veneers, tempered or untempered hardboard, flakeboard, chipboard, particle board, phenolic and melamine impregnated kraft paper and plastic impregnated cloth.

Coated one or both sides, it will be available in gauges down to .001, and in widths up to 50".

For More Information Circle Reader Service Number 412

Waterproof Glue Is Stain, Craze Resistant

A melamine glue which produces a completely waterproof bond for plywood and edge-glued lumber has been announced by National Casein Company. Called "M-3," the new glue is a white, practically-odorless powder that contains no filters or catalyst. Because heat is required to set the glue line, hot press and high frequency gluing are recommended. "M-3" is said to yield waterproof, boilproof, non-staining and craze-resistant bonds of highest quality. It produces light-colored glue lines which meet rigid government specifications MIL-A-397B, CS-35-56 and others, for waterproof plywood. The glue can also be used with liquid and powdered urea resin glues to upgrade the durability of the glue bond. When used as a urea resin glue fortifier, it enables plywood manufacturers to meet glue bond requirements for government specifications CS-35-56, Technical and Type I grades.

For More Information Circle Reader Service Number 413

Formica Features Unique Designs

Eleven exclusive designs are available in Formica Corporation's new Accent table top line. The tops come in sizes ranging from 18" in diameter to 36" x 42" rectangular and 36" square. "Game Top" is the

Continued on page 56

Announcing the new Paslode "CLIPPER" clip applicator

PORTABLE
CLIPPER weighs only 5¾ pounds, is well-balanced, easy to handle

AIR POWER
—a squeeze of the trigger and air power does the hard work, fast

MAGAZINE FEED
—loading takes only a few seconds, no wasted clips, no wasted time. Magazine holds 50 to 75 clips, depending on size

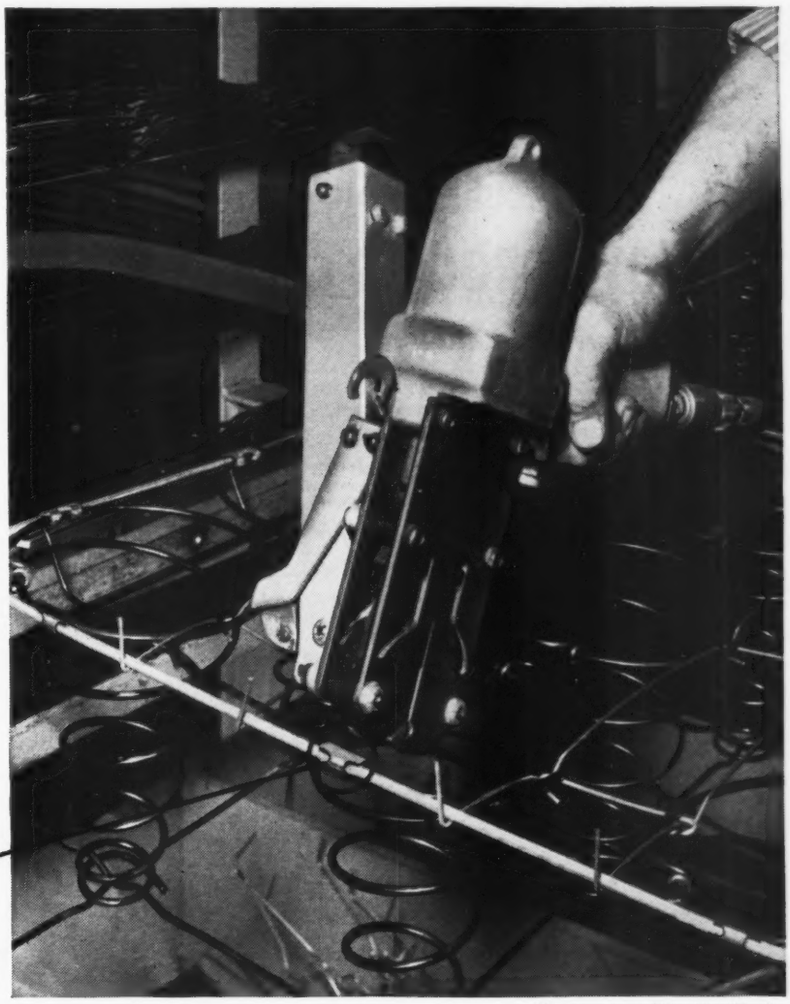
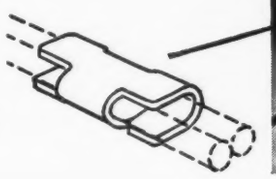


Photo courtesy of Kroehler Mfg. Co.

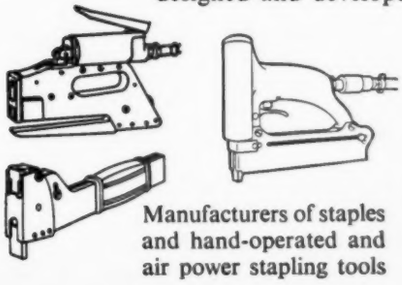
Special steel clips developed by Paslode come in two sizes; S-1 for wires 7-11 ga., B-1 for wires 11-13 ga. Other sizes are under development.



New power tool takes over a slow, hand-bruising job and does it better, faster, easier!

This is the first and only tool of its kind. The Paslode CLIPPER substitutes air power for muscle power, wraps a clip tightly around two or more wires in a fraction of a second, at the touch of a trigger...saves time and effort and reduces costs. Three-fold production increases have been reported.

The CLIPPER and the clips it uses were designed and developed by Paslode for the furniture and bedding industries. It has been tested, improved, and proved in production line use through the cooperation of a leading manufacturer. It gets the clip on tightly every time, has as much power at the end of the day as in the first minutes, makes it much easier for a worker to produce much more. Operation of the tool is simplicity itself. Reloading takes only a few seconds.



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Write for data sheet. Write or wire for a demonstration on your premises.

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Division of Signode Steel Strapping Company
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OVER A HALF CENTURY

NOW!

VITACURLD HAIR

MOTH-PROOFED for life

with exclusive

MOTHFRE-N

Thanks to new, exclusive Mothfre-N, you and your customers can now be free of worry about moth damage in hair filling. Found only in *Vitacurld* Hair—all grades, both loose and interlaced—Mothfre-N is the safest and surest moth-proofing agent of all against the ravages of both the moth and the carpet beetle.

Containing properties found in no other, it is completely non-toxic, odor-free. Woll's closely supervised quality control assures 100% protection for the life of every hair fibre.

Look into this sales-stimulating "plus" from us . . . which can add up to a plus-for-you, too!

WRITE, PHONE FOR SAMPLES

Wollastic Latex RUBBERIZED CURLED HAIR

Genuine New Vitacurld HAIR REG. U. S. PAT. OFF.

F. P. WOLL & COMPANY
FRANKFORD, PHILADELPHIA 24
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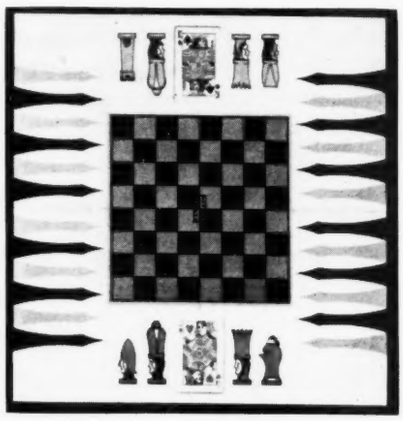
REPRESENTATIVES IN
ALL PRINCIPAL PRODUCTION AREAS

FOR DATA CIRCLE FDM NO. 1087

It's New

Continued from page 54



"GAME TOP" is the current favorite among 11 exclusive Accent table tops presented by the Formica Corp.

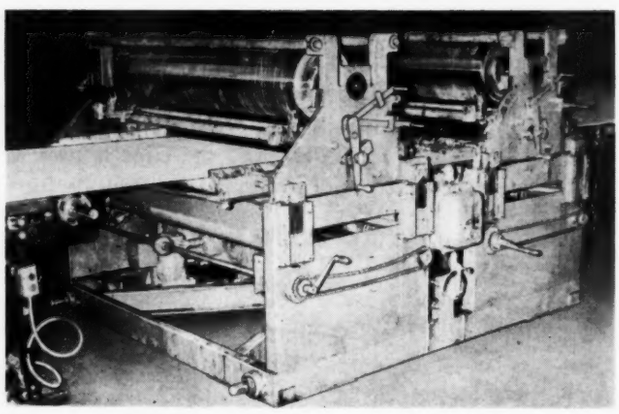
current best seller; it features a brilliantly colored red, black, blue and gold pattern, artlayed on a background of solid white. The Accent tops were created to blend with restaurant, lounge, and other commercial decorative themes, providing the qualities of Formica laminated plastic in designs different from patterns and colors sold to the general public.

For More Information Circle Reader Service Number 414

Grainer Claims Perfect Two-Color Match

An infinite register two-color graining machine has been introduced by The Union Tool Corporation. The "Uni-Grainer" is designed to give true-to-life reproductions of wood grains on sheets, tops, fronts, and panels. Makers report it's quickly set up, easily operated and rapidly cleaned.

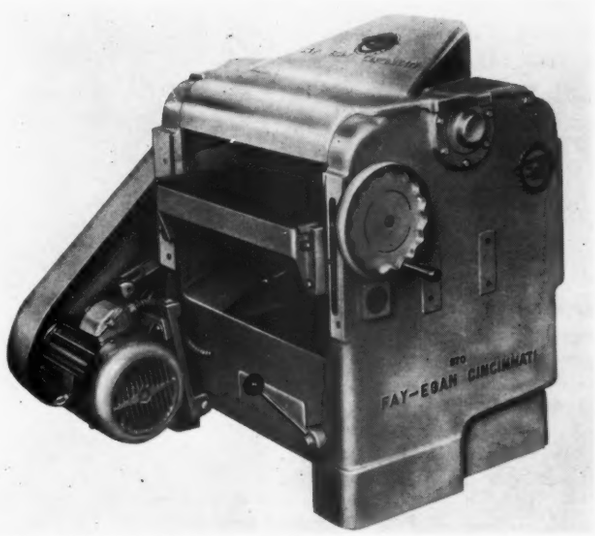
The printing assembly is easily raised or lowered for thickness adjustment, without changing the conveyor pass line height, and the cylinder is designed for fast removal through split housings and roller bearings. All rolls are mounted in roller bearings, and all excess ink is reclaimed. Washer rolls for cleaning the cylinder may be added if desired. Massive fabricated plate steel construction insures the rigidity needed in any printing operation, the firm



INFINITE REGISTER GRAINER is reported to offer a perfect two-color match on sheets, tops, fronts and panels.

reports, and the machine is ideally suited to automation. Models are available for 36", 48" and 60" width material, and the feed speed is variable.

For More Information Circle Reader Service Number 415



BALL-BEARING SURFACER features four-knife cylinder and 7½ HP motor.

Four-Knife Surfacer Offers True Planing

A sturdy ball bearing production wood-working machine offering increased economy has been added to J. A. Fay & Egan Company's "900" line. A 24-inch Single Surfacer, No. 970, it features a four-knife dynamically balanced round safety type cylinder which makers say offers true planing action, even on heaviest cuts. Ball bearing mounting of rolls and a 7½ HP motor are reported to assure smooth operation. The 970 surfaces one side up to 24" wide and 8" thick, with two feeds, 27 and 42 feet per minute. Overall length of the table is 32"; it's raised and lowered on large screws through a convenient handwheel. The cylinder turns at 4500 rpm, is powered by a fan-cooled, totally-enclosed, ball bearing motor, with V-belt drive. A magnetic starter provides overload and undervoltage protection. A new type knife grinding attachment is available as an optional feature with the 970. This screw-type attachment, mounted on the machine at the factory, permits grinding of knives without the time-consuming removal of the components from the machine.

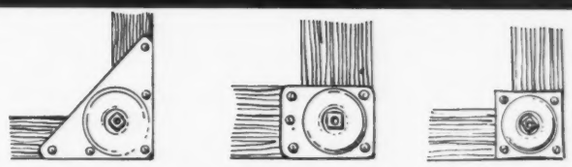
For More Information Circle Reader Service Number 416

Belt Sander Has New Feed Design

A new wide belt sanding machine featuring pinch-roller and conveyorized automatic feed is now in production at the Oakley Company. Designated the Model HP-24", it has a corrugated rubber conveyor

Continued on page 58

There's a Victor Clinch nut Plate to fit your needs best



TRIANGULAR *For Rail Construction*

RECTANGULAR *For Frame Construction*

SQUARE *For Rail Or Frame Construction*

Cold rolled or zinc plated and iridited! Plating is guaranteed against rust for one year, even in coastal areas. Victor patented clinch nut plates are the strongest and longest lasting you can buy.

UNITED STATES PATENT #2,784,930

PLATE Number & Style	PRICE In Drums of 2,000	PRICE In Bags of 500	PRICE Zinc Plating and Iriditing
#1800 Square Flat-18 Gauge-¼" Nut	3c ea.	4c ea.	$5.00 per 1,000 additional
#1810 Square 10 deg.-18 Gauge-¼" Nut	3c ea.	4c ea.	
#1815 Square 15 deg.-18 Gauge-¼" Nut	3c ea.	4c ea.	
#7 Rectangular Flat-16 Gauge-5/16" Nut	3½c ea.	4c ea.	$8.50 per 1,000 additional
#7A Rectangular 10 deg.-16 Gauge-5/16" Nut	3½c ea.	4c ea.	
#10 Triangular 10 deg.-16 Gauge-5/16" Nut	6c ea.	7c ea.	$11.00 per 1,000 additional
#15 Triangular 15 deg.-16 Gauge-5/16" Nut	6c ea.	7c ea.	
#20 Triangular Flat-16 Gauge-5/16" Nut	6c ea.	7c ea.	
#1410 Triangular 10 deg.-14 Gauge-5/16" Nut	7c ea.	8c ea.	$13.75 per 1,000 additional
#1415 Triangular 15 deg.-14 Gauge-5/16" Nut	7c ea.	8c ea.	
#1420 Triangular. Flat-14 Gauge-5/16" Nut	7c ea.	8c ea.	

P.S. We can supply Hanger Bolts

2" x 5/16" Hanger Bolts are completely threaded from top to bottom, with ¾" machine thread and 1¼" wood screw thread for maximum gripping power

15M $11.95/M 5M $12.95/M 1M $14.95/M

For additional information on plates or legs, write:

Victor SUPPLY CO.
1514 Wealthy St., S. E.
Grand Rapids 6 Michigan, Phone GL 6-1335

FOR DATA CIRCLE FDM NO. 1079

SINCE 1872
Imported
Quality CANE Webbing

Beauty and grace of cane — assets to modern and traditional design. Your inquiry is invited for samples and prices of the wide variety of patterns available.

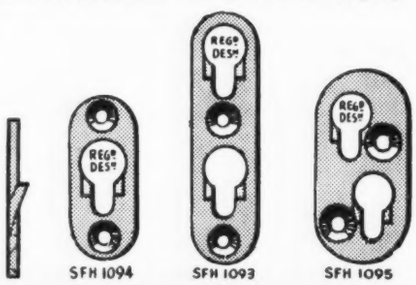
THE OTTO GERDAU CO.
Import-Export Established 1872
82 Wall Street, New York 5, N. Y., WHitehall 3-6200
ENGLAND • FRANCE • HONG KONG • INDIA • GERMANY • JAPAN • DENMARK
FOR DATA CIRCLE FDM NO. 1050

SELBY KEYHOLE FITTINGS

For Knock-Down chair construction.

Round headed screws engage through the holes, giving rigid WEDGE ACTION jointing.

Rustproofed.



SFH 1094 SFH 1093 SFH 1095

SELBY FURNITURE HARDWARE COMPANY
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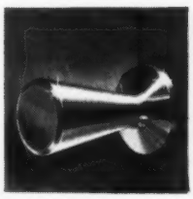
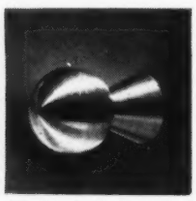
FOR DATA CIRCLE FDM NO. 1073

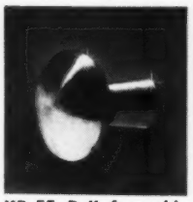
EPCO KNOBS for Cabinet Doors and Drawers

- Machined from Aluminum or Brass Bar Stock
- Beautiful Jewel-like appearance
- Easy to install


KP-50 Pull for cabinet doors in clear anodized aluminum or lacquered solid brass bar stock. Other finishes available.


KP-51 Pull for cabinet doors in anodized solid aluminum or lacquered solid brass bar stock. Other finishes are available.

These new pulls are carefully designed to give lifelong beauty and service. Each fulfills all the necessary requirements for easy operation, clean and handsome appearance, ease of installation and freedom from maintenance worries.


KP-55 Pull for cabinets and doors in anodized solid aluminum or lacquered solid brass bar stock. Other finishes available.

KP-56 Pull for cabinets and doors. In anodized solid aluminum or lacquered solid brass bar stock. Other finishes available.

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On the complete EPCO line of magnetic and friction catches, E-Z glide track and glides, and drawer pulls will be sent on request.

THE ENGINEERED PRODUCTS CO.
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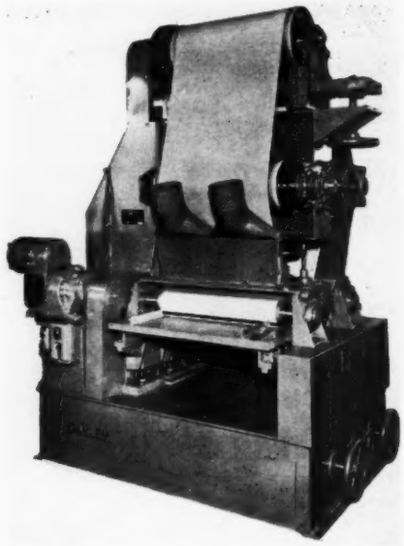
FOR DATA CIRCLE FDM NO. 1048

It's New

Continued from page 57



PINCH ROLLS and conveyor belt combine in this belt sander design to prevent kick-back or trapping of short work.

belt operating around the lower infeed and outfeed pinch-rollers and the soft-rubber contact roll. This conveyor prevents trapping of short work between the positive-drive infeed rolls and sand belt or between belt and outfeed rollers. Pieces as short as nine inches can be automatically fed in, through and out of the machine without butting. A variable speed motor drives the feed mechanism through a roller chain. The combination of pinch-rolls and cenveyor belt feed mechanism prevents the possibility of kick-back.

When first applying a new sand belt to the machine, it can be positioned, if necessary, by means of a manually operated handwheel, but once it is placed in the desired operating position it automatically holds this position and tracking is automatically maintained by means of side guide rollers. The sand belt is quickly and easily changed, a one-man job.

Automatic compensation for slight variations in stock thickness is achieved by interaction of the spring-loaded platen suspended between two idler rolls and the soft-rubber center contact roll. Passing under the sand belt and controlled by these two elements, the stock is said to enjoy a floating action that compensates for slight thickness variations and helps achieve a good polish.

For More Information Circle Reader Service Number 417

Three-roller Powerfeed Boasts Strong "Pull"

A three-roller powerfeed recently imported by the A. T. Mitchell Machinery Co., promises increased efficiency at low initial cost. Advantages claimed for the "Roma 130" include: exceptionally strong "pull"; sturdy motor; light weight; simple adjustment into all positions and directions; easy swing-away for change of cutters; click-back return to correct working

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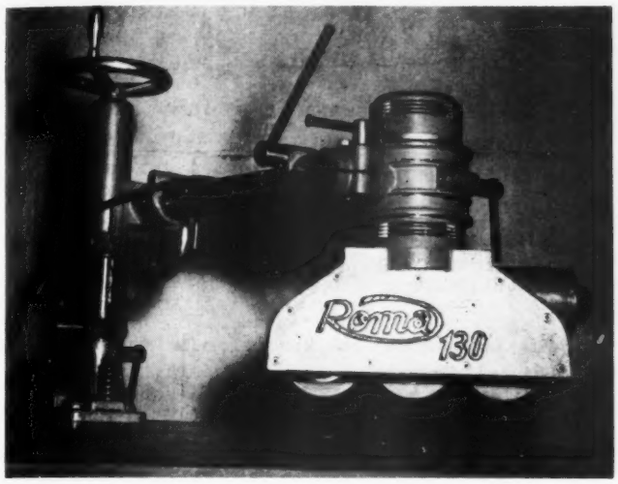
position; pressure adjustment by novel spring technique; self-adjustment to big differences in height; universal design for all machines—easily mounted on any available machine area; no greasing points—all parts run in oil; maximum safety and effortless work.

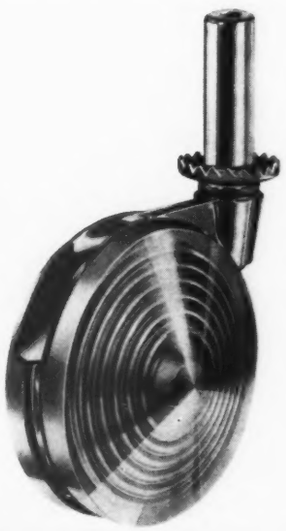


INCREASED EFFICIENCY, low initial cost and plenty of pull are promised by the importers of a new powerfeed with three-roller design.

Details: distance between stand and rollers in horizontal position, approximately 16″; maximum height of wood admitted, approximately 5″; distance of rollers, center to center, 4¾″; diameter of rollers, 3½″ or 4⅝″; width of rollers, 2″.

For More Information Circle Reader Service Number 418

New Caster Designed For Casual Furniture

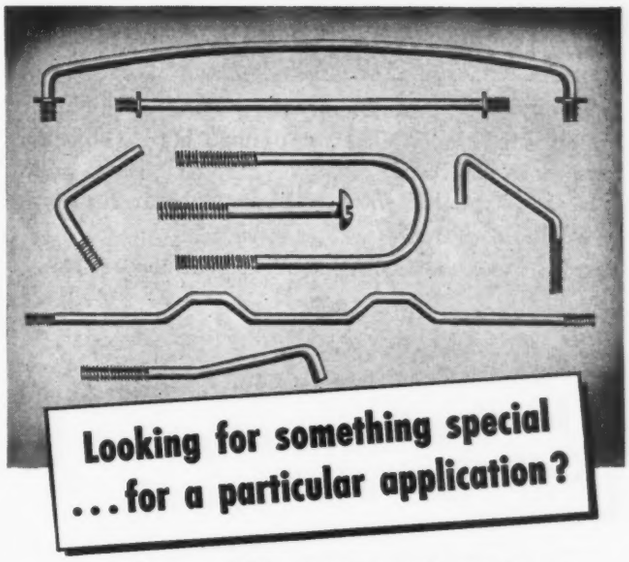


EYE APPEALING DESIGN of new decorative caster features three-inch plastic wheels in white, black or gold.

A new decorative caster, "Twindisk," designed for use on rolling furniture pieces such as coffee tables, tea wagons, TV and radio stands, buffet carts and other "hospitality" furniture, is now available from The Faultless Caster Corporation.

The three-inch wheels, made of a specially devel-

Continued on page 60



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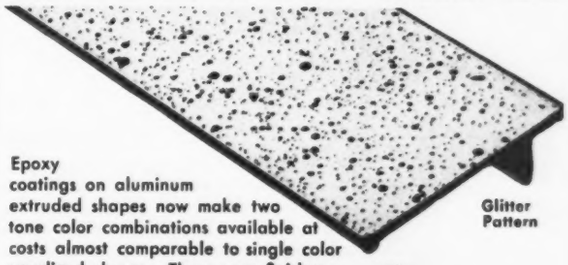
FOR DATA CIRCLE FDM NO. 1067

METAL EDGE MOULDINGS with TEXTURED FINISHES



Epoxy coatings on aluminum extruded shapes now make two tone color combinations available at costs almost comparable to single color anodized shapes. These new finishes allow for new and different styling.

Glitter Pattern

In Chrome & Brass too!

Some suggested combinations: Gold or Silver Glitter on White Background. Gold or Silver Glitter on Black Background. Black Spatter on White or Gold Background. White Spatter on Black or Gold Background.

Write today for samples and prices.

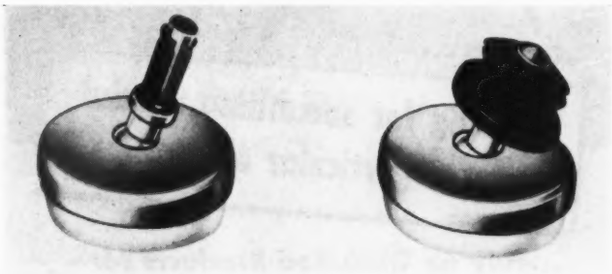
NEW YORK METAL MOULDING CO.

19-22 45th STREET, ASTORIA, L.I., NEW YORK

FOR DATA CIRCLE FDM NO. 1063

oped plastic, are available in smart, white, satiny black or shimmering gold. The streamlined horn is finished in a choice of bright brass or chrome. Three stem styles are available for cast bases, tubular furniture or wood furniture.

For More Information Circle Reader Service Number 419



NON-STAINING, non-corrosive furniture glides have been designed witth a nylon base.

Non-Marking Glides Feature Nylon Base

Furniture glides featuring a nylon base have been introduced by The Bassick Company. The non-staining, non-marking glides are similar to Bassick's steel-based tilting models, except for the nylon base. They are said to provide increased protection for floors, and are particularly suited for use in climates where rust or corrosion is a problem, or on carpets and resilient floor coverings.

For More Information Circle Reader Service Number 420

New Literature

INDUSTRIAL POWER TOOLS for production and plant maintenance comprising the 1960 line of Skil Corporation are listed and described in a two-color illustrated catalog. Perforated for insertion in a binder, the catalog contains 64 pages, and is complete with illustrations of product applications.

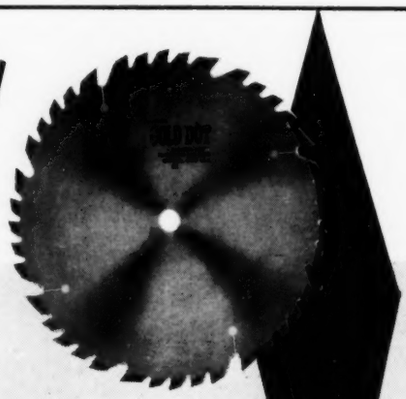
For More Information Circle Reader Service Number 421

PRESSURE-SENSITIVE ADHESIVE called "Res-N-Glue" is the subject of a technical data sheet published by the Schwartz Chemical Co., Inc. A cold setting, pressure-sensitive adhesive, the glue bonds such materials as supported vinyl, polyethylene, insulation, and thin veneer—to themselves and to wood, metal, fiberboard, and similar materials. It remains flexible indefinitely, and may be applied by brush or spray.

For More Information Circle Reader Service Number 422

There is nothing missing in the quality of Gold-Dot Carbide Saw Blades

HEINEMANN'S CARBIDE TIP SAWS HAVE ALL THE FEATURES A QUALITY SAW MUST HAVE . . . .



THE "GOLD-DOT"

VIBRATION DAMPENERS
Copper discs inserted under extremely high pressure eliminate scream and whistle so prevalent in many carbide tip saws. The "Gold Dot" also serves to eliminate vibration, permitting higher quality standards on all applications, with an increased blade life that can only be appreciated by using these saws under the most rigorous work conditions.

EXPANSION SLOTS
Expansion slots are recommended for most job applications. They permit cooler running and allow for heat expansion under severe operating conditions, thereby reducing cracking and warping.

MADE IN SIZES FROM 5" TO 36" DIAMETERS.

"LOCKED-IN" TIPS
Newly designed tips of special analysis tungsten carbide are precision seated by the highest skilled craftsmen. The unique "locked-in" tips hold tighter as more pressure is applied to the cutting edge, affording greater safety and additional blade life.

KERF AND TOOTH SPACING TO MEET ANY JOB APPLICATION.

MANUFACTURED BY **HEINEMANN SAW CORPORATION**
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THE SOURCE OF QUALITY WOOD AND METAL CUTTING SAWS FOR ALMOST FIFTY YEARS

WRITE FOR CATALOG NO. 24

FOR DATA CIRCLE FDM NO. 1054

Furniture Engineering

A technical section for managers, department heads and technicians responsible for production, planning, cost analysis and research, in the furniture, upholstery, and bedding industries.

Research Probes Color Control of Wood Through Chemistry
Page 65

Wood Tech: Trees for Furniture by Carl A. Rishell
Page 62

Automatic Clip Machine Speeds Spring Assembly
Page 69

FDM

WOOD TECH

CARL A. RISHELL

Trees for Furniture

Last month, in discussing various strength properties of hardwoods used in furniture manufacture, the property of specific gravity was emphasized. Being the index of density and unit weight, the specific gravity of a piece of wood generally is indicative of its strength.

There are exceptions and, for exact engineering data, information on other strength properties is necessary. For our purposes, however, we can dispense with the necessity of such extreme accuracy. Given the specific gravity, we can make our own predictions of strength properties.

There are many other things about trees and the wood they produce, other than strength, that are interesting and important to the furniture manufacturer. To describe every species that has been used for furniture is too great a task to handle in this column, but the more important domestic species and a few outstanding foreign ones can be discussed.

Oak

The very mention of this species brings to mind things of strength and durability. Oak has always been used for substantial structures, vehicles of the heaviest type, and other products requiring ruggedness.

But the species also has a more kindly connotation that is typified in old taverns, paneled and floored with oak and equipped with oak tables that had been scoured with lye and wood ashes so thoroughly and for so long that their clean whiteness rivaled any freshly laundered tablecloth. And there is the library, in the more stately homes, with time-colored oak paneling providing quiet coolness for summer occupancy, snugness and warmth for cold winter evenings. The uses of oak in furnishing our homes are so multitudinous that there is hardly any article for which the species cannot be used.

The term "oak" is very broad and covers two main groups of trees. In the United States, alone, there are more than 50 species of oak, of which about 35 have more or less commercial value.

Southern live oak, for example, long has been known for its fine qualities as a boat and ship building material. It was, and still is, so highly prized for this use that, during the Civil War, considerable quantities were stored under water at one of our Navy yards—and forgotten. Discovered during World War II, it was retrieved for top grade marine construction.

Live oak, with its festoons of moss, is a gracious symbol of our Southland. Its lateral limbs are so tremendous that, during the War Between the States, an entire regiment was said to have encamped at times under the branches of a single tree.

The two main groups of oak are "white" and "red". The color distinction, though sometimes apparent, is of little importance and cannot be relied upon. In fact, identification of one or the other is often so difficult that only the most skilled experts, with the aid of microscopes, can be positive about them.

The pores of many white oaks are often plugged, but using this for identification is quite misleading as some of the white oaks do not have that characteristic.

The average specific gravity for either group is about 0.64, from which it can be inferred that most of the strength properties of both are about the same.

Certain white oak species have very durable heartwood, a quality said to be lacking in the red oaks. It must be pointed out, however, that the durability of the sapwood of any species in either group is about the same. Also, both the sapwood and heartwood of some white oak species are of low durability.

The question then arises—if there is so much similarity, is there any real difference for the purposes for which they can be used? The answer is that, for a few specific purposes, there are species of oak that are unique and have earned the right to be preferred.

For example, the most important white oak species, *Quercus alba,* is preferred for tight cooperage. The reason is that the vessels in the heartwood of older trees is clogged with substances to such extent that the wood is liquid tight. However, chestnut oak, though usually denser, also has these properties and can be used for the same purpose.

As another example, the heartwood of several oak species is considered best for some products that must resist decay. With extensive use of modern chemical treatments, the reason for such preference should vanish.

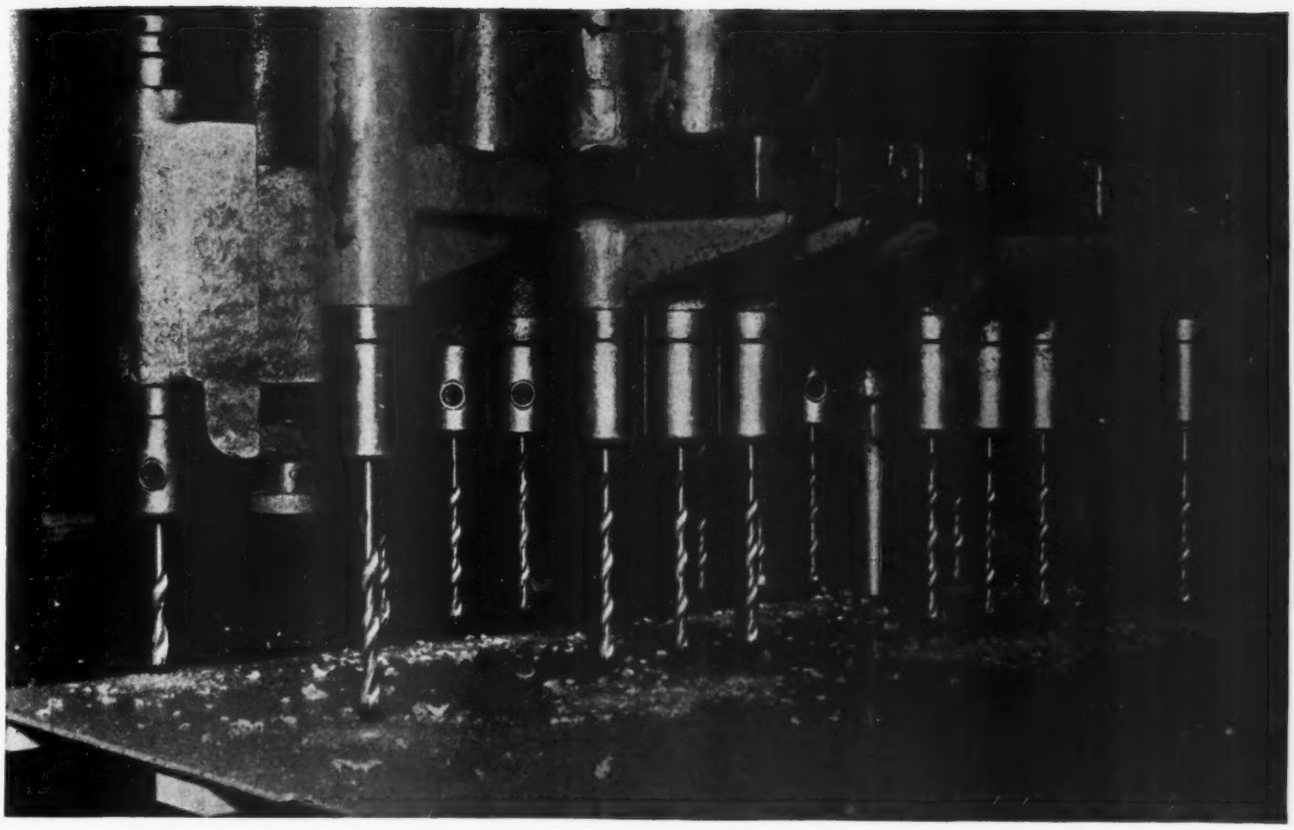
The preference for white oak for many uses has been based on prejudice or custom. White oak flooring, for example, brought a higher price than the red for many years. Not only has the gap closed, but often a preference for red oak flooring is expressed.

Of course, it is logical that one or the other species might be preferred for certain designs, but an appraisal—based on reasonable judgment—should be about the same of either species. They are equally beautiful and besides, most customers for wood products cannot detect one from the other. One may think that he is good at species identification, but unless he has had special training in the field, he should not get into an argument that could lead to court action—his chances of coming out with his skin are about 50-50!

Oak is one of the preferred furniture woods of all time because there are so many varieties that nearly any texture is available. All have easy working properties. A multitude of totally different appearances are obtainable, not only through species selection, but also in the way it is machined.

For example, if soft-texture, slow-grown white oak is cut approximately on a 45 degree angle, it usually will show a very uniform and rather close

Continued on page 64



Greenlee Tools help Curtis Companies Incorporated increase production of kitchen cabinets

Curtis utilizes a revolutionary new "U" shaped hardboard chassis in the manufacture of "Fashionwood" Kitchens. At their Sioux City, Iowa plant Greenlee Tools help keep production in high gear at all times. The photo above shows 16 Greenlee No. 177 Spur Machine Drills used in a Greenlee No. 386-C Gang Borer to bore holes for connecting hardware. These Greenlee drills last longer . . . keep down-time at a minimum. Their design permits continuous resharpening . . . for example, compare the lengths of the two drills at the extreme left. Get complete information on Greenlee Tools. Write for our latest brochure.

Begin with Greenlee tools . . .
they're better to begin with

WOODWORKING MACHINERY MANUFACTURERS' ASSOCIATION WMMA

GREENLEE TOOL CO.

Division of Greenlee Bros. & Co.
1861 HERBERT AVENUE
ROCKFORD, ILLINOIS

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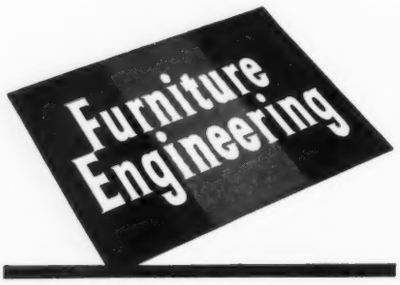


Wood Tech

Continued from page 62

grain pattern. If turned even slightly toward the radial position, the quartered figure will begin to show up more prominently until the piece may even become too gaudy. However, if the piece is turned in the other direction, the growth rings will be predominant and give the piece an entirely different appearance.

All woods have this characteristic to a certain extent, but it is exceptional in oak.

Color variations are another characteristic of the oaks. To realize its extent, go to your dimension plant and, from a hundred or more pieces having identical machining, select a half dozen that look the nearest alike. Place these side by side and note how uniform the color is, then turn the panel around and view it from the opposite direction. If you are average, you will have quite a surprise. These are among the things that give all oaks a more pronounced character than any other domestic species

If you are interested in manufacturing case goods from oak, you probably will find the soft-textured, slow-growth material the most suitable. On the other hand, if you want to make bent parts, choose heavier textured and more rapidly grown material and you likely will have less breakage in bending. Also, as most bent parts are of relatively small dimensions and are used where there is a maximum of load, the heavier textured material will be stronger. Remember specific gravity—the heavier the stronger.

American Black Walnut

Alaska became noted for its gold, Africa for its diamonds, but in no country in the world is there a more beautiful gem among woods than our own American Black Walnut. Like gold and diamonds, this species has many industrial uses that are not particularly dependent on beauty. Unlike the diamond or gold, it is not rare or expensive.

American black walnut is a regal wood that has earned its position as one of the most valuable woods in the history of our forest products industry. It has been used for nearly every purpose that wood serves, including logs for log cabins, framing, siding, sheathing, shingles, flooring, paneling, vehicles, boats, interior trim, carvings and even firewood. Large quantities have been used for rifle stocks, instrument cases and too many other useful products to mention.

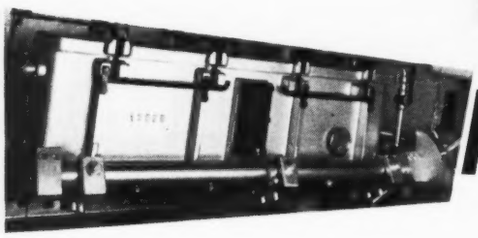
When this country was first settled, American black walnut was found in nearly all eastern and central states, not growing in solid stands like some of the oaks, but as isolated trees and small groves scattered throughout the hardwood forests.

Many of the finer trees were destroyed in land clearing, but even in the very early days the best logs were saved for making furniture for the new homes, for wagons and agriculture implements.

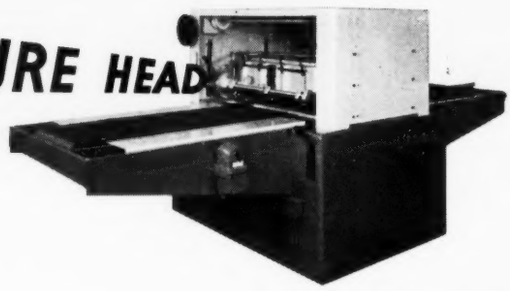
The virgin forest trees have about

Continued on page 67

EXCLUSIVE!



PRESSURE HEAD



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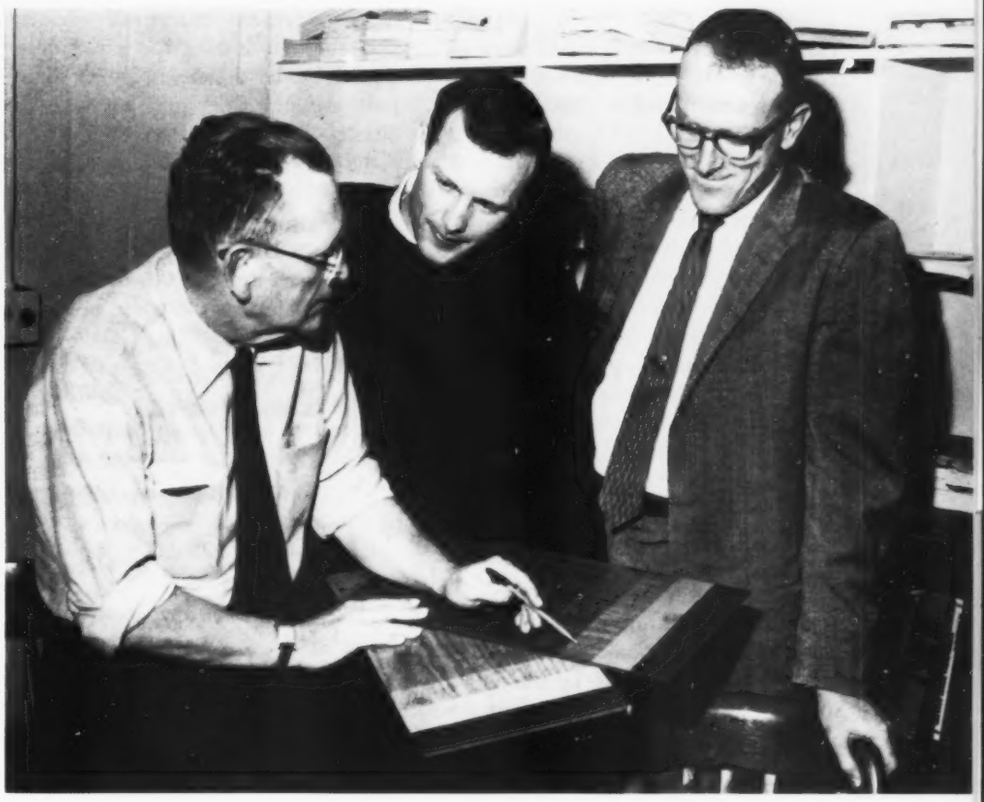
FOR DATA CIRCLE FDM NO. 1084

HYDROSPRAY FINISHING EQUIPMENT by Graco Company is examined by grad students Clifford Judy, Richard Allen.

ACCELERATED SUNLIGHT effect on wood is obtained by tests on this Weatherometer. William Harrison, wood technology graduate student at Duke, is adjusting the carbon electrodes in the testing device.

CHEMICAL EXHAUST HOOD is demonstrated to N. Paige Will by Dr. John D. Sullivan at Duke University finishing lab.



OUTLINING BUILD-UP stages of printed finish on hardboard is Dr. E. S. Harrar, Dean of the School of Forestry, Duke University. George Dutrow, wood technology graduate student, and Dr. John D. Sullivan, assistant professor of wood technology, look on.

Research Probes Color Control of Wood Through Chemistry

BY CAROLYN KNUEMANN

Color retention of wood can be increased chemically.

With this hypothesis, significant practical experimentation is under way by Dr. John D. Sullivan, wood technologist at the Duke University School of Forestry in Durham, N.C. Some of the research is a joint endeavor of scientists, furniture manufacturers and industry suppliers.

Recognizing that color change is a major problem in stains and in woods, laboratory projects have been

Con'td on page 66

Research Probes Color

Continued from page 65

set up to determine the effects of ultra violet rays, as in sunshine.

"We know that discoloration can be prevented by altering the chemical content of the wood with additives—a surface treatment to stabilize the surface elements chemically so they will not be broken down by ultra violet rays," says Dr. Sullivan. "This process is uneconomical commercially at present. But there is the possibility that application of research findings might make the change feasible as well as desirable."

Whether color retention is actually desired depends on the species of wood used, he points out. For instance, 100-year old walnut and butternut have a depth of color, richness and expensive look. Aged, darkened mahogany and cherry are revered by antique lovers. Pine, aspen and birch, however, may yellow unesthetically with time.

One of the current experiments at Duke induces color change of panels of various types of wood, then follows with exposure to ultra-violet rays to see if the color is retained. It was found, quite by accident when a Duke Forestry student spilled sodium hydroxide on Philippine mahogany, that the light brown wood turned a purplish brown. This reaction will be explored further.

Light reflection from wood has values important both for appearance and for quality control, declares Dr. Sullivan. Anatomical factors must be considered: grain direction; type of wood exposed—spring or summer, sap wood or heart wood; variables due to extraneous materials in the wood such as resin, mineral salts, oils. A project testing light reflection from wood is being conducted by Dr. Sullivan with a Gardner Gloss Meter made by Gardner Laboratories at Bethesda, Md.

"The furniture industry may reach the stage wherein, instead of quality control on the basis of personal inspection, as today, there could be quality control based on physical measurements," predicts the technologist.

If the second situation could be attained, there would be dual advantages of reduced production costs with fewer supervisors, and more objective results.

Ozone for bleaching is another possibility being investigated at Duke. Since bleaching is primarily an oxidation reaction, and ozone is a strong oxidizing agency, use of it seems logical. As yet the machinery is expensive, but its potential is great. A project has been set up at Duke with the Lilly Company of High Point, N.C., to determine a bleaching agency that can be applied with non-corrosive equipment. After about a year, the project will be evaluated.

"The dream of the finishers is to produce a one-shot surface treatment," says scientist Sullivan.

Another impirical project in the Duke labs is on the new Hydra Spray. This apparatus sprays on finishes without a compressed air jet. A large amount of air pressure is put on the fluid itself, and forces out the material through a small opening, so that the high velocity causes self-atomization through hitting the air. Consequently, a large percentage of material leaving the gun reaches the object.

The Hydra Spray is quite different from the usual spray gun. With present equipment, velocity of air necessary to atomize creates turbulence, thereby preventing much of the spray from even hitting the wood or reaching the surface. Much material is pulled off into the exhaust system.

"Savings up to 50 per cent might be effected with the new equipment," states Dr. Sullivan.

The Hydra Spray already is used by the paint industry. It has a potential for spreading to other industries, such as furniture.

"With Hydra Spray, conventional booths should not be necessary," Sullivan envisions. "There would be less material in the air. Water baths would suffice."

An experiment testing Hydra Spray for furniture manufacturing purposes was started this fall at Duke.

One effective airless spray, made by Nordson Corp. of Amherst, Ohio, has been installed in a few progressive plants such as Craftique Furniture at Mebane, N.C., notes Sullivan. As part of the completely new finishing system at Craftique, the airless arrangement has a central room with all pumps at exactly the right pressure. Finishing materials are mixed, and then piped into the spray areas.

Concerning some other developments of finishing application and research, Dr. Sullivan comments:

For color retention, wax or similar surface finishes can filter ultra-violet rays, but oil finishes are not desirable for color retention.

Most or all of the major suppliers are engaged in private research on color retention, sometimes in collaboration with universities.

Pigmented toners are being used increasingly in low-end and some medium merchandise—a base coat is applied to lighten or darken the wood and to make the color uniform;

Printed grains are gaining widespread use in some low-end goods, with pigment applied and then grain printed on by an ink roller, photographic process or other means—but a disadvantage of printed grain is "broadcast" of material irregularities.

Dr. Sullivan believes that the Forest laboratory can serve both basic science and furniture manufacturing, along with conservation. A native of Lake Forest, Ill., he took a degree in wood technology at the University of Idaho in Moscow, Idaho; was a graduate fellow there researching the mechanical properties of wood; and received his doctorate and taught in the Forest Products Department at Michigan State College in East Lansing, Mich., before joining the Duke faculty.

A new finishing area, an addition to the dry kiln building, was opened at Duke in January of this year. Costing $50,000, the area comprises three rooms, including a fireproof storage section for inflammable solvents, lacquers, varnishes, and such. A modern venting system with exhaust hood has been installed. Equipment includes: a Grayco Hydra-spray; a DeVilbiss air spraying system; apparatus for chemical analyses such as condensations, polymerizations, and distillations; abrasives, brushes, and general work needs. As of March this year, the Duke lab claims to be the "newest and most modern" college in wood finishing technology.

Long term research is being carried on in the lab. For example, a current experiment being conducted by graduate student Ralph Weaver is concerned with investigating the surface chemical phenomena of wood and the effect on surface coatings. Yellow poplar is being used at present. Later, the experiment will be continued by future Duke graduate students working with walnut, cherry, mahogany, oak, maple, pine, ash and

other species. The effect of chemical bonding of surface material such as glue or varnish or lacquer, to wood, is being determined.

Some of these experiments last over a ten-year period.

Along with scientific studies on finishing, other research of interest to the furniture industry is being done at Duke. Work is being done on mechanical properties of wood, particle boards, vapor drying techniques for exotic woods, and in the adhesives field including their use with plywood and decorative veneers.—*Carolyn Knuemann.*

Wood Tech

Continued from page 64

disappeared, but the species is so valuable that the supply of second growth, mostly from individually planted trees, has been sufficient to meet the demands even during war times when the gunstock industry was most active.

As American black walnut is particularly suitable for reproduction purposes, it is unlikely that there will ever be a great scarcity as with some species that do not have the advantages of easy restocking. The tree is relatively fast growing, both in the open and intermingled with others.

There are many important incentives, other than the value of its wood, for planting it. The walnut makes a fine shade tree and it bears nuts that are particularly prized. Probably no one knows the exact size and extent of the nation's resources in this species.

There is no one answer to why American black walnut is such a useful material for so many products. Its excellence is derived from a combination of many desirable properties. As its grain is usually straight, it was widely used for split fence rails. History's most famous rail-splitter, Abraham Lincoln, is said to have expressed preference for walnut in his rail splitting.

Walnut is a medium density wood having a specific gravity of 0.55, and has considerable strength and ability to resist shock. Its modulus of rupture in bending is rated at more than 14,000 pounds per square inch, which is somewhat above the average for its specific gravity. Though fairly hard, the wood is easy to cut with hand or machine tools.

The heartwood is decay resistant and thus quite durable. Even more important is its stability, its resistance to warping and checking. And of course its rich tones and intriguing grain patterns give it rare beauty. Nature seems to have singled out this particular species to show how lavishly it can endow a single wood with nearly every desirable property and nice living habits.

There are several foreign species of walnut that are closely related to our native species and have similar uses. For instance, Circassian walnut, sometimes known as Turkish, Italian or French walnut—depending on the country of origin—is widely known in the furniture trade and rated as one of the finest cabinet woods known. It was first known as Persian walnut, the country of its origin, but its range has been gradually extended by consistent planting for the choice nuts it bears. These are known, in America, as English walnuts and are grown extensively in California.

Several species of walnut, similar to American black, grow in South America and are valued locally. The species most similar to ours is found on the western slope of the Andes. In

Continued on page 71

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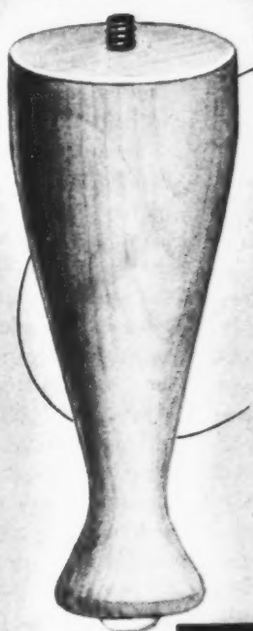

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Cushion Filling Machines

Continued from page 46

with individual directional control valves for each cylinder. The motor and pump are mounted inside the angular steel frame, and automatic stops are provided to set the filling boxes for any size pad within the rated capacity of each machine.

Anderson Filling Machines are of the plunger type, and designed so that even on extra long cushions or crib mattresses there is no danger of distorting either the spring unit or the filling. The smooth, even action of the plunger guarantees against kinking. Controls are conveniently placed for best operator efficiency, and the hydraulically operated filling box lid eliminates the necessity for manual compression of the filling material.

Anderson's standard size filler is called the "Cushion Master CA-6." Another model, the "D-16," is ideal for making those tough two-cushion jobs, they state. The D-16 embodies the same features and principles of design as the CA-6, but the D-16 is of heavier construction and boasts larger capacity. The D-16 also has the ability to fill long cushions from the ends, assuring the shorter seam and less closing time, although cushions can also be filled from the side when desired.

Included in the Anderson company line is a versatile model called the "Y-50." It's a proficient machine, they claim, for filling youth bed mattresses, crib mattresses, extra long cushions, studio cushions, and felt pads and mattresses up to the 54-inch size.

The major improvement introduced by the company, asserts Anderson's Richard Fisher, is the "Curved Cushion Filler DS-16." Introduction of this machine, he says, has eliminated the costly hand-filling of all types of curved cushions. The filler accommodates curved cushions of various sizes and radii . . . curved hopper sizes and shapes can be modified to suit each customer's requirements. An added feature of the machine is the versatility of changeover to a straight filling hopper to fill standard, straight cushions. Hopper sizes on all Anderson Hydra-Speed filling machines can be altered to customer specifications for any filling need from dinette chair backs and seats to largest cushions.

J. W. Droll Co., a division of United Mattress Machinery Co., Quincy, Mass., produces an entry in the Cushion Filling Machine field in a new departure from the usual conception of such equipment with its "Droll Conveyor-Spout Cushion and Crib Mattress Filler." What makes this machine so unusual?

It does away with plungers, and instead it moves the filling material into the cover through a conveyor-spout with a fast, endless forward motion that requires no reversing of the machine between fillings, says United's Otto T. Glaman. The resulting speed and precision are unique, especially as they take the skill out of the operator's hands and make the procedure entirely automatic and mechanical. This is not a stuffer, but a filler in the full sense of the word, points out Mr. Glaman.

Droll's Conveyor-Spout filler is especially designed and built to fill the longer cushions of upholstered pieces as well as crib mattresses with spring units, although it will fill soft material cushions equally as well. The machine produces a perfect cushion, states the maker, because design and mechanical action prevent buckled spring units.

In describing the mechanical action of the machine, Droll reports that the filling material is placed in the laying box, and in a single operation it is shaped by equalized compressors and moved into the cover through the conveyor-spout. And it is this spout which serves to maintain perfect compression of the filling as it moves into the cushion cover. The filling is not forced into the cover; it is carried in "with a pair of giant hands, gently and without distorting or roughing."

Because the Droll power machine is an open-top filler, the laying table requires no cover to compress the filling material before it goes through the spout. And, according to Droll, the open top not only eliminates the separate operation of compressing, but helps produce perfectly smooth cushions or crib mattresses due to the absence of friction on the felt.

The conveyor-spout of the Droll filler is built extra long, so that many types of leatherette or similarly coated or treated covers can be filled without crinkling or breaking in the filling process. Also, the extra-long spout permits the use of quilted or corded boxing to attain special decorative effects. Spout size is adjustable from 14″ to 33″ in width; 3″ to 6″ in depth; and up to 57″ in length.

The Conveyor-Spout Cushion Filler, with its fast, continuous forward motion, is definitely a production machine, states the Droll report, and the mouth of the automatic compression unit will take filling material as fast as the operator can provide covers for the spout.

A sleek, modern, efficient-looking power cushion filler is manufactured by the Optenberg Iron Works, Sheboygan, Wis. Optenberg's M. F. Umbreit delineates specifications of the company's latest model. The streamlined appearance of the filler is the result of many styling changes over a period of years. But more important, says Mr. Umbreit, are the numerous mechanical advancements engineered into the machine.

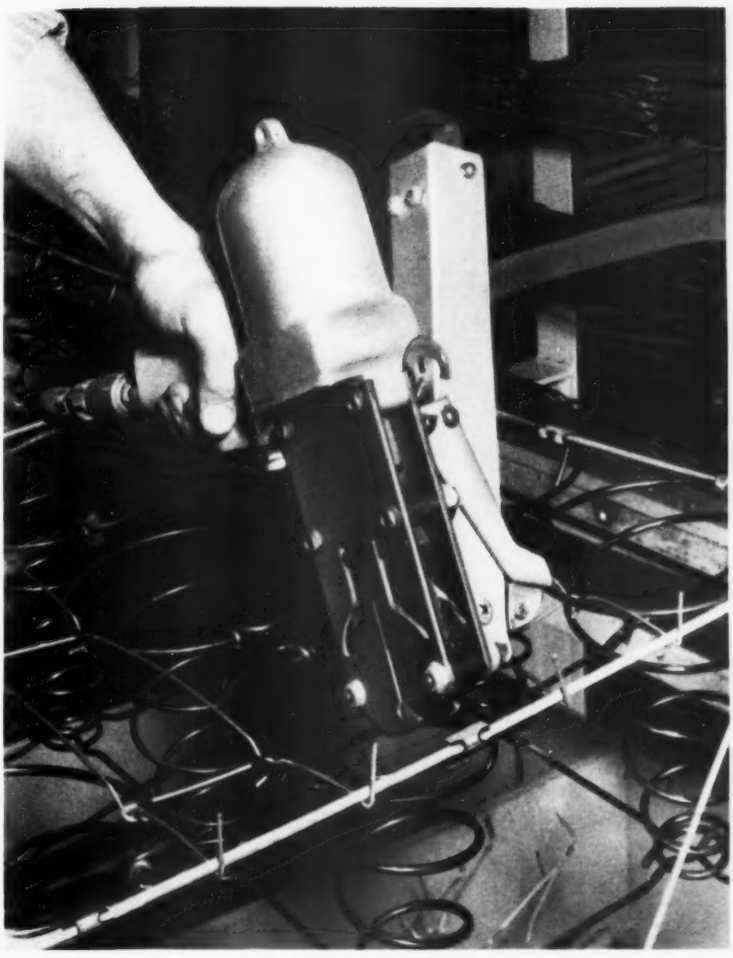
The Optenberg power-operated cushion filler carries a standard pan which will fill cushions 16″ to 30″ wide, 32″ long, and with boxing variations from 3½″ to 4″. For special jobs, inter-changeable filling pan assemblies can be furnished to accommodate cushion sizes up to 36″ wide, 72″ long, and boxings ranging from 1½″ to 6″ high. Each sturdily-built filling pan is pressed from a single sheet of 14-gauge steel to form a one-piece continuous hinge, says Mr. Umbreit.

The Optenberg Filler is powered with a 110/220 volt, ½ h.p. repulsion induction motor. Also, it contains a push-button starter switch, and is equipped with thermal overload protection.

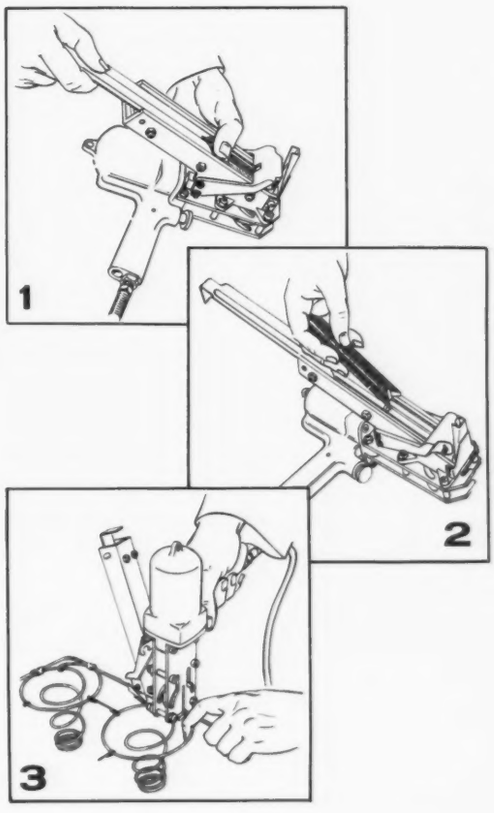
The largest filling-pan designed and built by Optenberg fills mattresses 4′ wide and 6′6″ long. But the most unusual employment of a cushion filler resulted from the needs of a manufacturer of baseball bases. This manufacturer is now happily stuffing baseball bases, 12″ square and 2″ thick, with modified tins on an Optenberg filler, says Mr. Umbreit. And the customer is delighted, he adds, because just one machine now handles all of the work . . . formerly a tedious, hand-stuffing task.

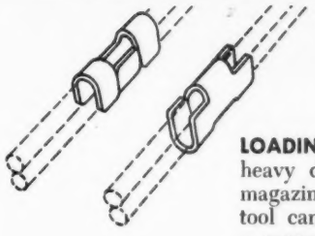
Although we aren't aware of any furniture or bedding manufacturer who has branched out into the baseball base-stuffing field, it is well to remember that such design versatility contributes much to the solution of cushioning problems.

And we are in complete agreement with Ellis Lochner's statement that "a cushion filling device still remains an essential piece of equipment in every upholstered furniture and bedding plant."—*Leonard S. Simon.*



Furniture Engineering





ELIMINATES MUSCLE POWER—New Paslode "Clipper" at work in a furniture factory, above, speeds up what has been a hand-bruising, tedious job. Two views of clip are shown in drawings, left.

LOADING—Sketches (1) and (2) show how 50 heavy duty or 75 regular clips are loaded into magazine of Paslode "Clipper". The pneumatic tool can apply a clip to two wires in less than a second (sketch 3). Photos and data courtesy Paslode.

Automatic Clip Machine Speeds Spring Assembly

A portable, air-powered, magazine-fed clip applicator for upholstery and bedding spring assembly has been developed by the Paslode Company, a subsidiary of Signode Steel Strapping Co.

The new "Clipper" machine outmodes former hand methods in certain manufacturing operations in which a clip has to be placed over two wires and then closed manually with pliers. Previous attempts to design a powered tool were too limited and proved too cumbersome for practical use, according to the manufacturer. The Clipper weighs 5¾ pounds.

Field tests conducted since July, 1959 at a large furniture manufacturer reportedly found that the Clipper's air-powered closing cycle of about a half-second increased production on this operation three-fold.

There are now two models of the machine; the S-1, for joining 7 to 11 gauge wires (.178 to .120 inches diameter); and the B-1, for wires of 11 to 13 gauge (.120 to .091 inches diameter). The S-1 magazine loads more than 50 clips of .042 inches thickness; the B-1, over 75 clips of .023 inches thickness. Recommended air pressure is 75 psi.

Accessories required for operation include: a pressure regulator and gauge installed near the operator; a ⅜ inch air hose not over 15 feet long from the regulator to the clipper; and air lines at least ¾ inch ahead of the regulator.

Maintenance involves a weekly oiling of the air inlet; twice-monthly oiling or greasing of the jaws, ram head, ejector slide, ejector pivot pin, and moving surfaces inside the side plates, and an occasional cleaning of the nose of the magazine. ■

For More Information Circle Reader Service Number 411

VERSATILE MATERIAL—"Lustra" panels of burn and mar-resistant plastic may be used for table tops, cabinet panels, screens and room dividers, as well as decorative accessories. Photos and data courtesy Lustra Mfg. Corp.

Decorative Panels Have Dimensional Effect

Dramatic color in depth is achieved in a new panel material developed by Lustra Manufacturing Corp. Designed for a variety of indoor decorative applications, the translucent panels consist of pearl chips suspended in colored sheets derived from polyester.

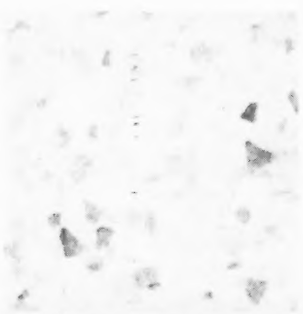
According to the manufacturer, the material is burn-mar-shatter-alcohol resistant and is easy to maintain. It is recommended for cabinet and desk paneling, counter or table tops, lighting fixtures, toys and architectural installations.

Designs available include: "Lustra Glow" and "Lustra Flake," translucent, pearly, multi-dimensional, in 12 colors; "Lustra Lace," a three-dimensional lace-like pattern, also in 12 colors; "Lustra Pearl," shell-like, translucent with swirling self-pattern, in two colors; and "Lustra Gem," pearly, opaque, with pearl chips in depth, also in 12 colors.

Lustra material may be cut and shaped; saws with teeth 32-40 per inch are recommended. It may be ground, sanded, polished, drilled, cemented and formed at 220-240°F. (except "Lustra Pearl").

The company makes a recommended adhesive, Lustra SL 27 with base of synthetic rubber, resins and solvents in proper viscosity for immediate application.

The material weighs 0.9 lbs. per square foot, comes in ⅛-inch thickness; finish, polished or matte. Lus-



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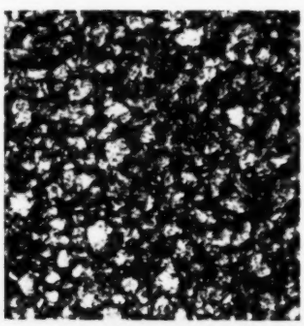
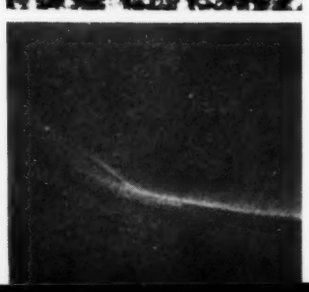


LUSTRA LACE



LUSTRA PEARL

tra Pearl comes in sheets 48 by 96 inches; all other patterns, 24 inches square.

The manufacturer has a design and engineering advisory service to aid you with any fabrication problem. ■

For More Information Circle Reader Service Number 423

Wood Tech

Continued from page 67

recent years, interest has grown in its possible export to the United States, but logging and getting the trees to seaboard presents a problem.

The writer has examined a small quantity of this South American walnut, and conducted minor tests on it, but the data derived are too meager to be conclusive. The average specific gravity probably is slightly less than our species, but apparently there is more variation which makes it difficult to ascertain its strength and other properties.

In appearance, the South American wood is almost identical with American walnut, but there are occasional black streaks in some boards which might be objectionable. Tests also showed moisture content varying from moderate to very high, with the latter being in pockets. Drying was somewhat difficult. If these high moisture content variations are typical for the species, new drying schedules would have to be worked out for it.

In any event, there is no doubt about the species being valuable, but just how valuable will not be known until it is thoroughly investigated. In this respect, anyone wishing to market an unknown foreign wood in the United States should first obtain all technical facts and practical information about it.—*Carl A. Rishell.*

Executiving

Continued from page 53

job." As a result of this thinking many managers end up doing routine clerical chores.

While it is easy to advise an executive to delegate more of his work, it is also easy for the executive to counter with the fact that no one can do the job as well as he, or that he cannot depend on anyone else to do it. For example, we have all seen the executive who insists on pricing all special orders himself; or the one who insists upon preparing his own catalogs and brochures.

The secret to *effective* delegation lies in establishing a clear set of ground rules before the game commences; the executive who is successful in delegating duties is the one who operates under a set of predetermined policies and practices, which has been made clear to his subordinates. Armed with these rules, they are then in a position to handle the great majority of situations as they arise. The executive who has not forced himself to sit down and spell out the ground rules for his company, is most likely the one who has difficulty with delegation.

The other half of *effective* delegation consists of establishing an adequate system of control. These may be in the form of daily, weekly and/or monthly management reports which are designed to let the chief executive keep his finger on the pulse of the business without personally reviewing every bill, invoice, purchase order and voucher.

Summarily, by setting up the ground rules and then keeping appraised of the score, the good executive can control the present and still have ample time to contemplate the future.—*Victor A. Lennon.*

Book Reviews

Copies of books reviewed here and available by writing: Book Departments, FURNITURE DESIGN & MANUFACTURING, 608 South Dearborn St., Chicago 5, Ill.

COMPILATION OF ASTM STANDARDS ON TEXTILE MATERIALS, D-13

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Continued on page 72

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Textbook of WOOD TECHNOLOGY

By H. P. BROWN, A. J. PANSHIN, Assistant Professor of Forestry, Michigan State College, and C. C. FORSAITH, Professor of Wood Technology, New York State College of Forestry.

Vol. 1. Structure, Identification, Defects, and Uses of the Commercial Woods of the United States

626 pages, 322 illus., $9.50

This volume provides practical information on wood anatomy, distinguishing features of various wood species, keys for identification of woods, and much more. The scope of precise data insures a sound, authoritative reference on the structure, identification, major defects, and uses of more than 75 domestic woods. In quick reference form are practical aids that make the identification, inspection, selection, and utilization of woods more accurate.

Here are three Master Keys for wood identification, one based on features visible with the naked eye and hand lens, the second based on minute features, and the third for identification of coniferous woods only. One section provides information on the strength in bending, shock resistance, working and gluing qualities, paint holding ability, durability, stiffness, tendency to split, seasoning qualities, etc. of each species.

Vol. 11. The Physical, Mechanical, and Chemical Properties of Commercial Woods of the United States

761 pages, 163 illus., 45 tables, $12.50

The data on physical properties covers density of wood and how it varies . . . what moisture does to wood in making it shrink or swell, in changing its weight and compressibility . . . how water acts in wood . . . what heat does to wood, and much more. The section on bonding and finishing describes types of adhesion, aspects of the glue line, seven different wood fasteners, and the many kinds of finishes.

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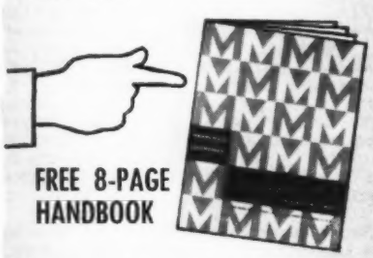

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FOR DATA CIRCLE FDM NO. 1058

Book Reviews

Continued from page 71

also contained within the edition.

The compilation is in a compact, convenient form and provides important data and information for anyone dealing with textile materials.

924 pages, hard cover. $8.50 per copy, plus 35 cents for postage and handling.

Promotes Office Furniture

Continued from page 45

Risom's newest collection of office furniture, "Group Nine."

A combination executive office and conference area features a double pedestal desk with aluminum base. Desk top is covered with real leather in Risom's "Flame" color. This exclusive color is carried out in the interior color scheme in desk accessories and chair upholstery. Exposed wood is walnut with a natural oil finish. ■

New in Vinyls

Continued from page 43

capture the richness and interest of fine hand-crafted Italian leathers.

DESIGNERS INTRODUCE VINYL PATTERNS. A new, medium weight, 27-ounce elastic backed vinyl for upholstery, in a 54-inch width, has been introduced by Denst & Soderlund Inc. The line, designated as Departure, employs a silk screen process utilizing vinyl inks to print on the vinyl material, which is supplied them by Columbus Coated Fabrics Corp. The unique process is claimed to insure lasting clarity of design, while the vinyl itself presents a luxurious appearance. The line includes a rich Tapestry, a floral-striped Arbor and an exotic Talisman, in vibrant tones of green, true-red, orange-red, beige, true-blue, saffron, white and gold, and black and gold. The material is recommended for furniture pieces facing double-duty wear, such as couch-beds, and is also suited for family room and den furniture, dinette chairs and patio furnishings.

Jack Lenor Larsen, internationally famous textile designer, recently joined the vinyl medium with a new, brilliantly colored line called Brasilia. The material comes in a 28-ounce elastic backed vinyl, supplied by the Landers

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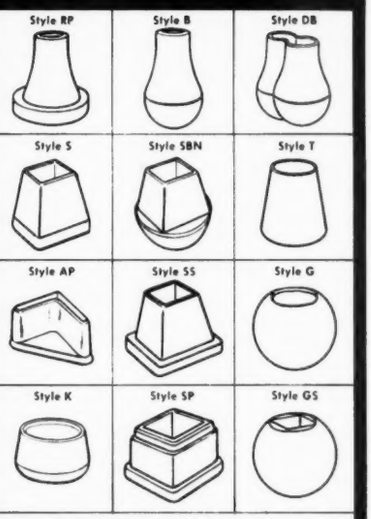

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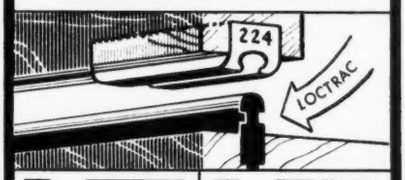

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THE NEWEST NYLSLIDE #224 HOLDS SLIDING CABINET DOORS SECURELY TO OUR NEW LOCTRAC AND STILL ALLOWS FREE SLIDING ACTION!

NEW PACKAGE 100 feet of LOCTRAC is coiled in a special, easy dispensing carton. Cut LOCTRAC to exact length required

FREE SAMPLES and LITERATURE on REQUEST

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P.O. BOX 4, SOUTH HACKENSACK, N. J.
DEPT. F.D.

FOR DATA CIRCLE FDM NO. 1053

FDM FUTURE DATES FOR MANAGERS

SPRING FURNITURE MARKET Atlanta Merchandise Mart Atlanta, Georgia	**April 18-20**
SPRING FURNITURE MARKET American Furniture Mart Merchandise Mart Chicago, Illinois	**April 18-23**
SOUTHERN SPRING FURNITURE MARKET Southern Furniture Exposition Bldg. High Point, North Carolina	**April 23-29**
GERMAN INDUSTRIES FAIR Hanover, Germany	**April 24-May 3**
NATIONAL ASSN. OF PLASTIC FABRICATORS ANNUAL CONVENTION Brown Palace Hotel Denver, Colorado	**May 22-26**
BRITISH FURNITURE EXHIBITION New York Coliseum New York, New York	**June 10-26**
SUMMER FURNITURE MARKET Exhibitor Building Waters Building Grand Rapids, Michigan	**June 16-24**
SUMMER FURNITURE MARKET Dallas Trade Mart Dallas Homefurnishings Mart Dallas, Texas	**June 18-21**
INTERNATIONAL HOME FURNISHINGS MARKET American Furniture Mart Chicago, Illinois	**June 20-25**
INTERNATIONAL HOME FURNISHINGS MARKET Merchandise Mart Chicago, Illinois	**June 20-July 1**
SUMMER FURNITURE MARKET Northwest Furniture Manufacturers Association Field Artillery Armory Northwest Furniture Mart Seattle, Washington	**June 26-29**
SUMMER FURNITURE MARKET Southern Furniture Exposition Bldg. High Point, North Carolina	**June 27-July 1**
SUMMER FURNITURE MARKET Atlanta Merchandise Mart Atlanta, Georgia	**June 27-July 1**
SUMMER FURNITURE MARKET New York Furniture Exchange New York, New York	**June 27-July 1**

Corporation. A handsome diagonal pattern, Thatch Rows, creates a new feeling in depth in vinyl and correlates a Brasilian theme reminiscent of native thatch. The material is claimed to be durable, scrubbable and fire-retardant, and is rendered in beige, yellow, red and blue colorways.—*Carole Nadwidney.*

Flair for Quality

Continued from page 28

Sofas are made in four lengths—100-inch, 90, 82, and 76—with matching sectionals and chairs of the same design.

Since warehouse facilities are not provided at the Flair factory, the firm does not defer shipments of orders if the cloth has been cut. But fast special order service—three to four weeks shipment—is offered.

In a vigorous merchandising propram, Flair maintains showrooms at Lenoir, Chicago, High Point, and Dallas. It prepares salesmen with a carefully written, confidence-inspiring Indoctrination Manual. The manual states:

"Flair is not cheap upholstered furniture; neither is it the most expensive. There are many, many lines cheaper than Flair and many higher. It, however, is well-made furniture at values which no one exceeds and few can equal. There is no better upholstered furniture on the market anywhere approaching Flair in price. It is a quality product."

The manual goes on to emphasize the "75 per cent hidden factor" in time and effort of manufacturing upholstered goods, as contrasted with case goods—and proceeds to inform its sales force of exactly why and how this factor can be exploited by the integrity of Flair. The Flair representative is expected to pass the information on to the retailer, and the retailer in turn to the consumer.

The current annual rate of production at Flair is in excess of 15,000 units. Sales by categories run: chairs, 40 per cent; sofas, 35 per cent; sectionals, 25 per cent. There has been a steady increase in output since the company's beginning, and a continuation is projected for 1960.

The company affirms a faith in its manifest initial success of the first two years, and in a growing list of prime retail accounts. —*Carolyn Knuemann.*

FDM CLASSIFIED ADVERTISING

RATES:
Per line (minimum 5 lines) no display....$ 2.00
Per inch (9 lines)..... 15.00
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List your name under this heading every month in a space this big for only $15.00 per issue.
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Experienced in Custom Cabinet Making, Store Fixtures, Production. Practical shirtsleeve type manager, with executive experience who can take full charge of custom shop, products development, personnel, and cost control.
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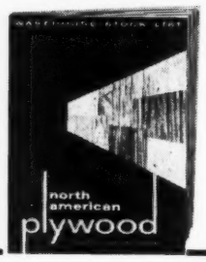

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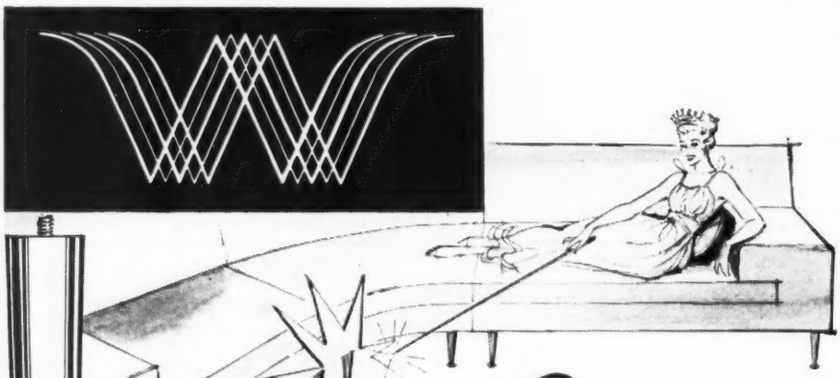
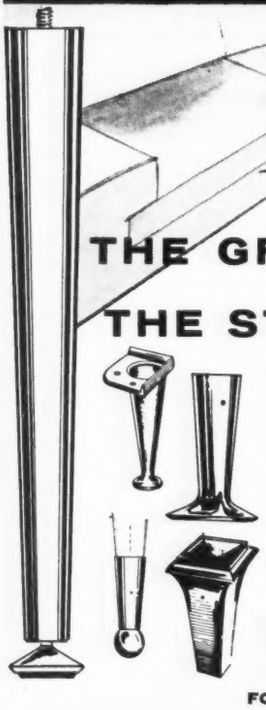


THE GRACE OF *Diana*...

THE STRENGTH OF APOLLO



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FOR DATA CIRCLE FDM NO. 1083

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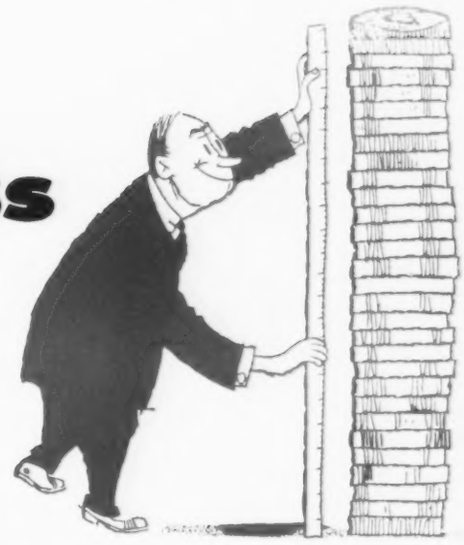

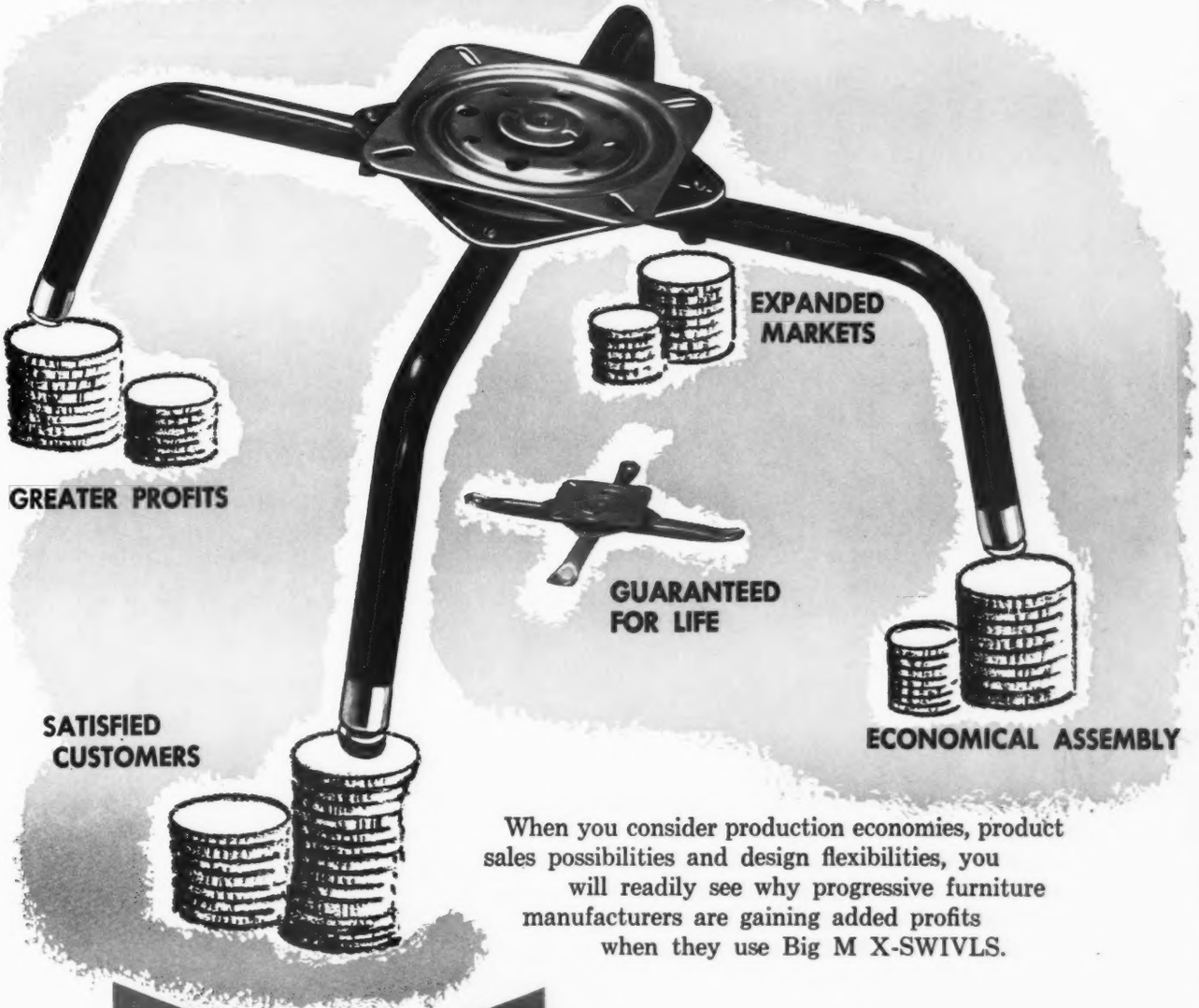

When you consider production economies, product sales possibilities and design flexibilities, you will readily see why progressive furniture manufacturers are gaining added profits when they use Big M X-SWIVLS.

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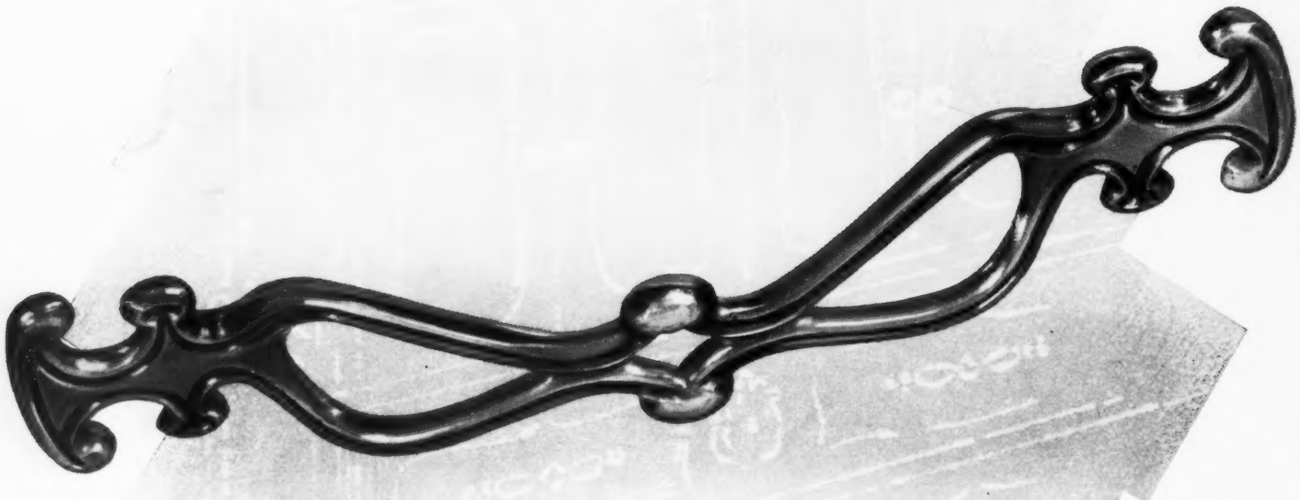

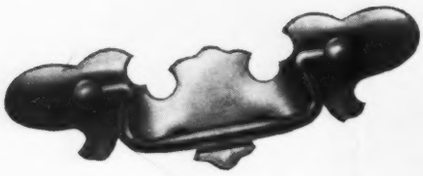

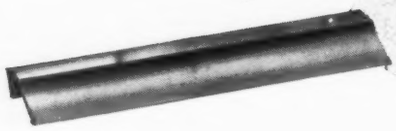

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